NWL Report No. 1859

CLIMATOLOGICAL WIND AND DENSITY DATA FOR TWENTY-FIVE USSR STATIONS

by

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U. S. Naval Weapons Laboratory
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ABSTRACT

Climatological wind and density data, by seasons, are presented for twenty-five USSR stations. Tabulations of means, standard deviations, and correlation coefficients, based on about ten years of statistical data over the period of 1950 to 1962, are given, by pressure levels (from surface to 100 millibars) for wind and by geometric heights (from surface to 16221 meters) for density. For purposes of description, graphical presentations of typical data are given for selected cases. These data were obtained from compilations and computations by the National Weather Records Center, Asheville.

FOREWORD

Mean seasonal wind and density data, applicable to twenty-five USSR stations, are presented for information. These data are believed to be of general interest to many activities. Although similar data for at least several of the stations are known to have been included in reports of broader studies, these earlier publications are classified and have had limited distribution.

Credit is due to the National Weather Records Center, Asheville, for supplying the statistical data. The helpful guidance in the preparation of this report of David R. Brown, Jr., Head of the Geoballistics Division, Computation and Analysis Laboratory, and Mrs. Doreen H. Daniels is acknowledged. Credit is also due J. E. Clift, Computer Engineering Division, Computation and Analysis Laboratory, for his assistance in planning the table formats.

APPROVED FOR RELEASE:

/s/ R. H. LYDDANE
Technical Director

DESCRIPTION OF DATA

1. Definitions of Data Coverage

Climatological wind and density data are presented in this report for twenty-five USSR stations (Figure 1 and Table 1). The data are based on measurements by means of operational radiosonde equipment taken for a period of approximately ten years. The twenty-five stations are located between north latitudes of about 40 and 69 degrees and between east longitudes of about 24 and 60 degrees. The wind observations were taken between January, 1950 and December, 1959; the density observations were taken between January, 1950 and January, 1962. Appendix A provides tables of mean seasonal wind components, standard deviations, and coefficients of correlation between levels, with respect to pressure level. Appendix B provides tables of mean seasonal densities, standard deviations, and coefficients of correlation between levels, with respect to geometric height.

For each combination of station and season, Appendix A provides a table of the following data for the wind at the surface and for pressure levels of 850, 700, 500, 300, 200, and 100 millibars:

a. The mean wind components, north-south and east-west (knots).

b. The standard deviations of the mean wind components (knots).

c. The coefficients of correlation between levels.

d. Number of observations (column heading designation OBSN) included in the data at each level for computation of the mean components and standard deviations.

In each table, the data contained in the columns headed by MEW are the mean east-west wind components (a negative component indicates a wind component from the west); the standard deviations of the east-west components are given in the columns headed by SEW. Correspondingly, the mean north-south wind components are given in the rows headed by MNS (a negative component indicates a wind component from the south); the standard deviations of the mean north-south components are given in the rows headed by SNS. The coefficients of correlation are presented by array, the rows and columns of which are arranged in accordance with the pressure levels. The coefficients of correlation for the east-west wind

GEOGRAPHICAL LOCATION OF TWENTY-FIVE STATIONS

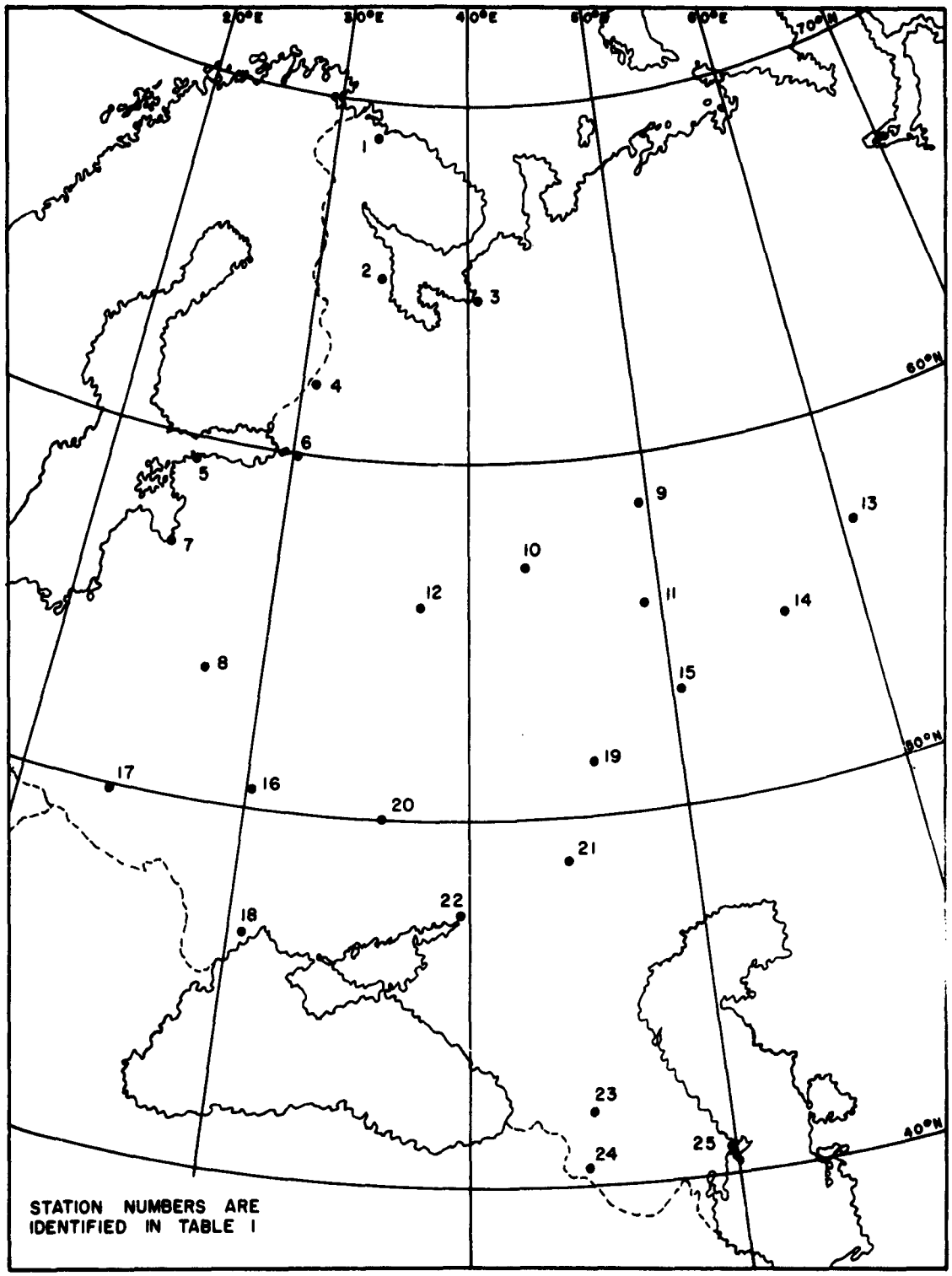


FIGURE 1

TABLE 1

STATION DESIGNATION AND OBSERVATIONAL RECORD SUMMARY

Station Name	WMO*	Figure 1 Symbol	Geographic Location Latitude (N) Longitude (E) Deg	Min	Altitude of Station Above Mean Sea Level Meters	Observational Summary Type** Rate**	Period of Record Wind	Density
Murmansk	22113	1	68 33	58 03	46	6 13	1/50- 1/62	1/50- 1/62
Kem Port	22522	2	64 34	59 47	10	6 13	10/50- 1/62	10/50- 1/62
Arkhangelsk	22550	3	64 40	35 30	13	6 23	1/50- 1/62	1/50- 1/62
Sortovola	22802	4	61 30	43 43	18	6 23	1/50- 1/62	1/50- 1/62
Tallin	26038	5	59 24	25 48	44	6 12	1/50-12/59	1/50- 1/62
Leningrad Town	26063	6	59 30	58 18	4	6 12	1/50-12/59	1/50- 1/62
Riga	26422	7	56 24	58 04	3	6 12	1/50-12/59	1/50- 1/62
Minsk	26850	8	53 27	52 32	234	6 22	2/56-12/59	4/50- 1/62

TABLE 1 (Continued)

Station Name	WMO*	Figure 1 Symbol	Geographic Location Latitude (N) Longitude (E) Deg	Min	Altitude of Station Above Mean Sea Level Meters	Observational Summary Type** Rate**	Period of Record Wind	Density
Kirov	27196	9	58 49	39 37	172	6 22	1/50-12/59	1/50- 1/62
Strigino	27553	10	56 43	13 49	82	6 22	2/53-12/59	2/53- 1/62
Kazan	27595	11	55 49	47 11	122	6 23	7/55-12/59	2/53- 1/62
Moscow	27612	12	55 37	45 34	156	6 12	1/50-12/59	1/50- 1/62
Sverdlovsk	28440	13	56 60	48 38	237	6 12	1/50-12/59	1/50- 1/62
Ufa	28722	14	54 56	45 00	197	6 22	1/50-12/59	1/50- 1/62
Kuibishev	28900	15	53 50	14 10	44	6 22	2/56-12/59	2/53- 1/62
Kyev	33345	16	50 30	24 27	179	6 13	1/50-12/59	1/50- 1/62
Lvov	33393	17	49 23	49 57	325	6 13	1/50-12/59	1/50- 1/62

TABLE 1 (Continued)

Station Name	WMO*	Figure 1 Symbol	Geographic Location Latitude (N) Longitude (E) Deg	Min	Altitude of Station Above Mean Sea Level Meters	Observational Summary Type** Rate**	Period of Record Wind	Density
Odessa	33837	18	46	29	64	6	3/53-12/59	1/50- 1/62
			30	38		13		
Saratov	34172	19	51	34	156	6	2/50-12/59	2/50- 1/62
			46	02		22		
Kharkov	34300	20	49	56	152	6	2/53-12/59	2/53- 1/62
			36	17		13		
Voroponovo	34560	21	48	41	145	2	2/50-12/59	1/50- 1/62
			44	21		22		
Rostov Na Donu	34731	22	47	15	77	6	1/50-12/59	1/50- 1/62
			39	49		12		
Tbilisi	37549	23	41	41	490	6	1/50-12/59	1/50- 1/62
			44	57		22		
Yerevan	37789	24	40	08	907	6	1/50-12/59	1/50- 1/62
			44	28		22		
Baku	37860	25	41	00	---	2	7/55-12/59	10/51- 1/62
			49	00		22		

*Number designation by the World Meteorological Organization (WMO).

**See text for definition (pages 4 and 5).

data are tabulated below the main diagonal of the array whereas the coefficients of correlation for the north-south data are tabulated above the main diagonal of the array.

For each combination of station and season, Appendix B provides a table of the following data for the density at the surface and at geometric heights of 1458, 3014, 5579, 7193, 9177, 11806, 13638, and 16221 meters:

a. The mean air density (kilograms mass per cubic meter).

b. The standard deviation of the mean air density (kilograms mass per cubic meter).

c. The coefficients of correlation between levels.

d. Number of observations (column heading designation OBSN) included in the data at each altitude for computation of the means and standard deviations.

e. The number designation for identification of each level.

In each table, the data contained in the rows headed by M are the mean air densities; the standard deviations, multiplied by 10, are contained in the rows headed by Sx10. The coefficients of correlation are presented by array, the rows and columns of which are arranged in accordance with the geometric heights.

The data of Appendices A and B are identified by a code number indicating the station number as used in Figure 1, the season, and the type of data, either wind or density. Within each appendix, the first major grouping is by station number (1 through 25) and the second major grouping is by season (winter, spring, summer, and fall, in that order, with symbols W, Sp, Su, and F, respectively). For example, in Appendix A the first table is identified by the code W-1 W, where the first W designates wind (common to all tables in Appendix A), the 1 represents the station number (in accordance with Figure 1), and the second W indicates that the data apply to the winter season. The second table of Appendix A is therefore coded W-1Sp, the third table W-1Su, and the fourth table W-1F.

2. Equations for Computation of Wind and Density Means, Standard Deviations, and Coefficients of Correlation

The following equations are among those employed by the National Weather Records Center in the computation of the data given in Appendices A and B:

$$\text{Mean} = \frac{\sum_i X_i}{N}$$

$$\text{Standard Deviation} = \sqrt{\frac{N \sum_i X_i^2 - (\sum_i X_i)^2}{N(N-1)}}$$

$$\text{Coefficient of Correlation (between ith and jth levels)} = \frac{(N \sum_{ij} X_i X_j) - (\sum_i X_i \sum_j X_j)}{\sqrt{N \sum_i X_i^2 - (\sum_i X_i)^2} \sqrt{N \sum_j X_j^2 - (\sum_j X_j)^2}}$$

where,

X_i = individual observation of data (wind or density) at the ith level

N = the number of observations (i.e., the number of soundings)

The value of N used in the computations of the means and standard deviations is in most instances greater than that employed for the computation of the correlation coefficients, since the latter require that data be available for both levels of each combination (ij) within a given sounding.

The density data were computed from observations of temperature, pressure, and relative humidity as follows:

$$\rho = \frac{0.3486\ (P - 0.377\ E_s\ RH)}{T_K}$$

where,

ρ = air density in kilograms mass per cubic meter

P = air pressure in millibars

E_s = saturation vapor pressure, at temperature T_K, in millibars

RH = relative humidity (e.g., for RH of 50 percent, use 0.50 in the equation)

T_K = air temperature in degrees Kelvin

It should be noted that the density data were procured at fixed pressure levels, however, the data were processed for presentation versus geometric height; that is to say the density data were not simply tabulated versus the geometric height associated with the standard atmosphere at the particular pressure level. In general, this conversion is obtained by use of the following integral, in the absence of direct measurements of the altitudes at which the observations are made:

$$h = h_o - \frac{R}{g} \int_{P_o}^{P} \frac{T(P)}{P} \, dP$$

where,

h = geometric altitude (h_o is the surface altitude)

R = universal gas constant

g = acceleration due to gravity

T (P) = air temperature as a function of pressure level

P = air pressure (P_o is the surface pressure)

3. Locations of Stations and Observational Record Summary

The latitudes and longitudes of the twenty-five USSR stations, for which data are given in this report, are listed in Table 1 and shown geographically in Figure 1. The stations are listed in Table 1 by name and WMO number (World Meteorological Organization; the number designations are given in Reference 1) together with the geographical co-ordinates, altitudes of the stations above mean sea level, and periods of record for both the wind and density data. Also given in Table 1 are numbers indicating the type of observation and the observation rate code, applicable to both the wind and density data (specific details of the type and rate data are described in Reference 1). These are described, in general, as follows:

a. Type of Observation

2 = 2 raobs per day (wind not tracked by electronic equipment)

6 = 2 rawins per day (wind tracked by electronic equipment)

b. Rate Code

The first digit describes the percentage frequency that data were received for the station:

1 = data received 90 percent of period and/or 90 percent of the possible observations of the month

2 = data received 50-89 percent of period and/or 50-89 percent of possible observations

The second digit describes the percentage frequency that observations reached selected mandatory levels:

2 = equal to or greater than 50 percent of observations received reach the 100 mb level

3 = equal to or greater than 50 percent of observations received reach the 300 mb level

4. Accuracy of Data

The climatological data given in this report are subject to errors of various kinds (for example, observational and processing errors). As far as is known, there is presently no pertinent information as to the accuracy of the instruments and procedures employed in making the observations and, hence, specific statements concerning the reliability of the data cannot be made. Several reports have been published, however, giving accuracies of radiosondes used in the United States, References 2, 3, 4, and 5. For example, the standard deviations of observational errors for the AN/AMT-4 radiosonde, as quoted in Reference 2, are as follows:

Pressure	Temperature	Relative Humidity
±1 mb at 1000 mb	±1°C	±5%
±3 mb at 500 mb	±1°C	±5%
±1.5 mb at 100 mb	±1°C	±5%

The above errors in radiosonde measurements would produce air density errors of the following magnitudes:

Pressure (mb)	Air Density Error (Relative to ARDC 1959) (%)
1000	0.4
500	0.8
100	1.6

The climatological seasonal mean densities were compared for consistency with the monthly mean data given in Reference 6. It was found that the monthly data, in terms of percent deviation from the ARDC 1959 standard atmosphere, enveloped the seasonal data, as given in Appendix B.

The errors in the wind data are even more difficult to assess. Reference 5 indicates that the observational errors in radiosonde measurements would be less than 10 knots in wind magnitude. The decreasing number of observations with altitude constitutes the most serious handicap in the wind climatological data. A bias is introduced at the higher levels (a bias toward lower values) in that the strong winds at the lower levels blow the balloon out of range before it reaches the upper levels. The magnitude of the mean winds given in Appendix A were compared with the monthly mean wind data given in Reference 7. Here again, the data were in reasonable agreement.

Except for the possible bias in the upper wind data, it is assumed that all the other errors in both the wind and density data would be random, and would not produce significant biases in the data as given.

DISCUSSION

1. Wind Profiles

The variation with pressure level of the seasonal mean wind components and standard deviations is shown in Figures 2, 3, and 4 for several typical stations, the latitudes and longitudes of which are representative of the area covered by the data of this report. Typical seasonal variations of the mean east-west components of the wind profiles are shown in Figure 2. In general, for all of the data recorded, the mean east-west components exceed the mean north-south components by a factor of about 2 or 3; in order to demonstrate this relation, Figure 3 shows a comparison of typical mean east-west and mean north-south components. Representative values of the standard deviations of the mean components, together with the corresponding means, are shown in Figure 4. The data show that there is little difference in the shapes of the profiles for the four seasons; typically, the highest mean winds occur during the winter season and the lowest mean winds occur during the spring season. The mean wind profiles exhibit an increase in the wind speed with altitude throughout most of the troposphere with peak mean winds generally occuring at an altitude of approximately 11 kilometers (in the region of the 300 and 200 millibar levels). Little seasonal variation is exhibited in the mean surface winds; however, the seasonal variations of the mean winds increase with altitude. Over the span of the locations of the twenty-five stations, only slight variation of the mean wind profiles with latitude is demonstrated; for example, at about the 300 millibar level, the mean winds for the lowest latitudes considered are only about 5 knots greater than the mean winds for the highest latitudes considered. For all of the wind data contained in this report, the standard deviation of the mean wind (of the same order of magnitude for both the mean east-west and mean north-south components) increases with altitude over most of the troposphere; at the surface, typical standard deviations are from about 5 to 10 knots whereas at the 300 millibar level the standard deviations are usually about 25 knots. The increases in mean wind speed and variability with altitude, as shown by the data of this report, are in agreement with the results reported in Reference 8.

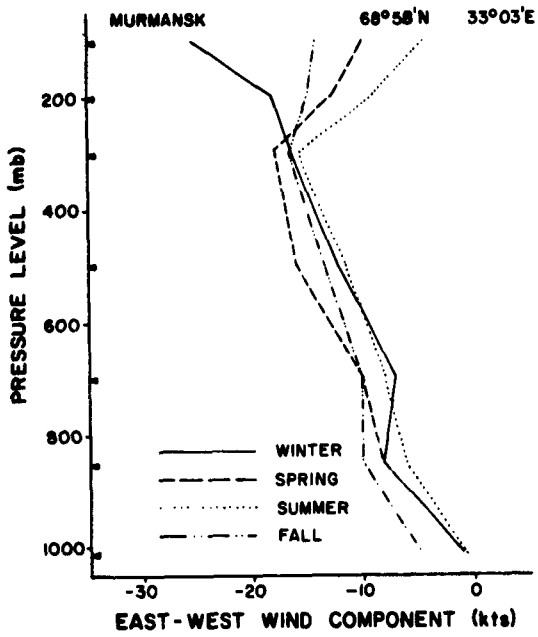
2. Density Profiles

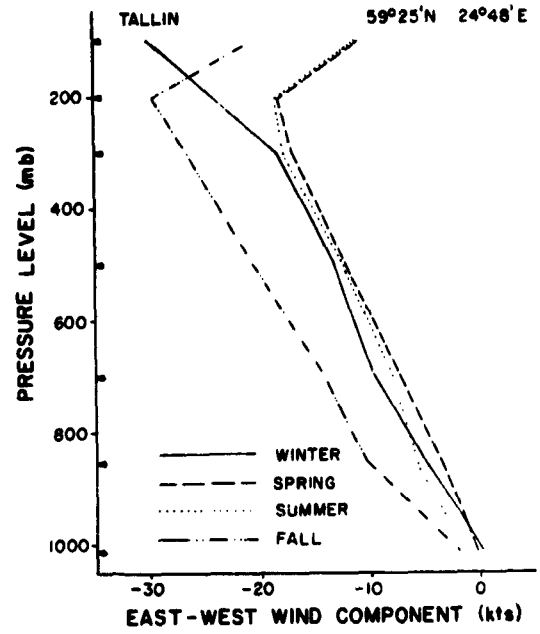
The variation with geometric altitude of the seasonal mean air densities, expressed as the percent departure from the ARDC 1959 model atmosphere, and the standard deviations are shown in Figures

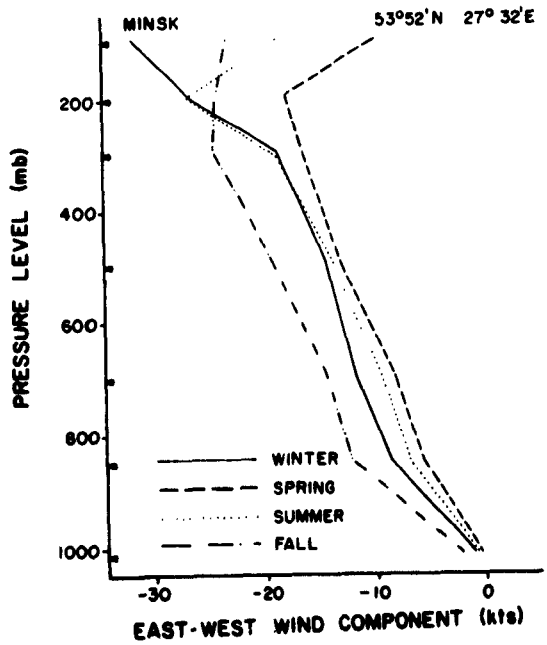
MEAN EAST-WEST WIND COMPONENTS

SEASONAL DEPENDENCE PER STATION

(DATA LEVELS •)







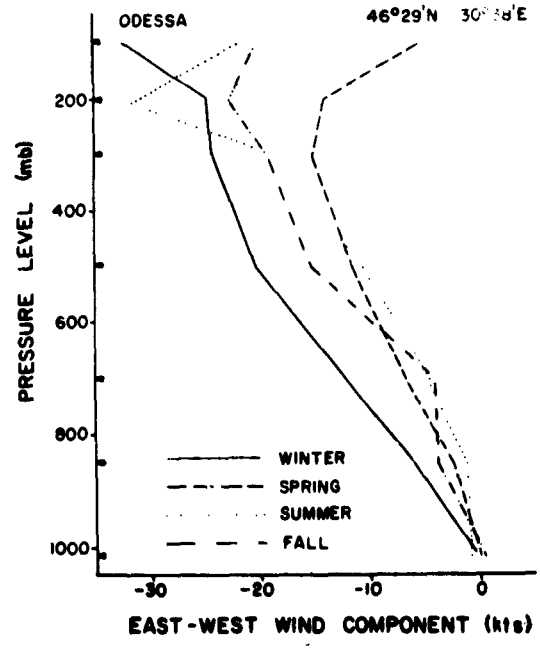


FIGURE 2

COMPARISION OF MAGNITUDES OF TYPICAL MEAN EAST-WEST AND MEAN NORTH-SOUTH WIND COMPONENTS
(DATA LEVELS •)

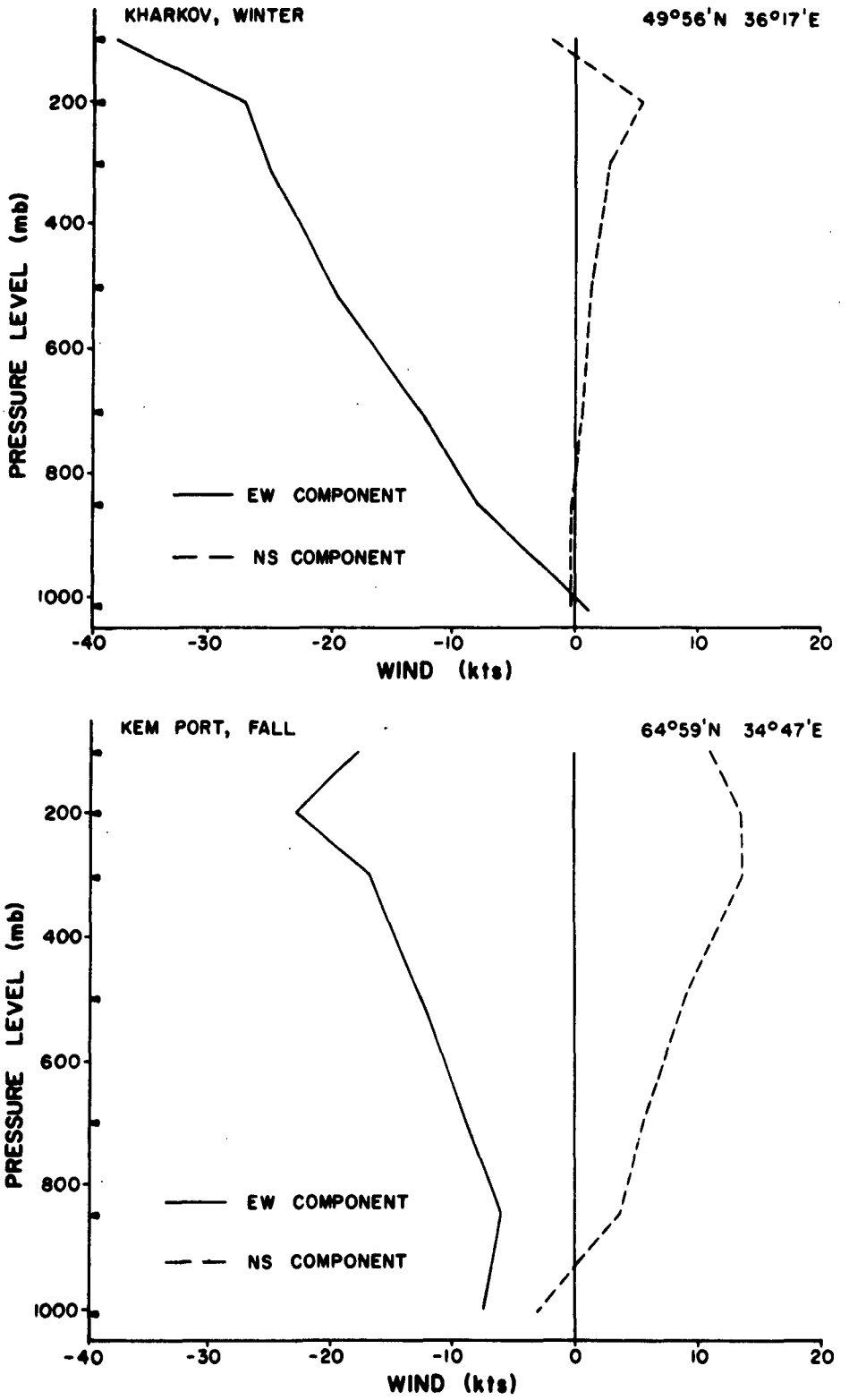
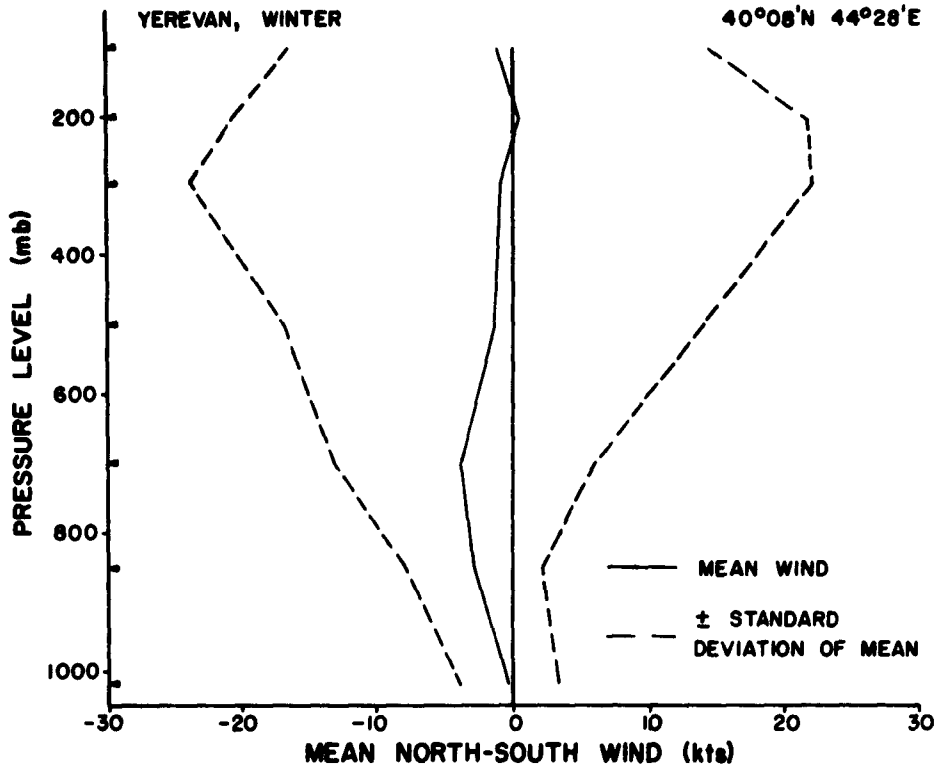


FIGURE 3

STANDARD DEVIATION OF TYPICAL MEAN SEASONAL WIND COMPONENTS
(DATA LEVELS •)



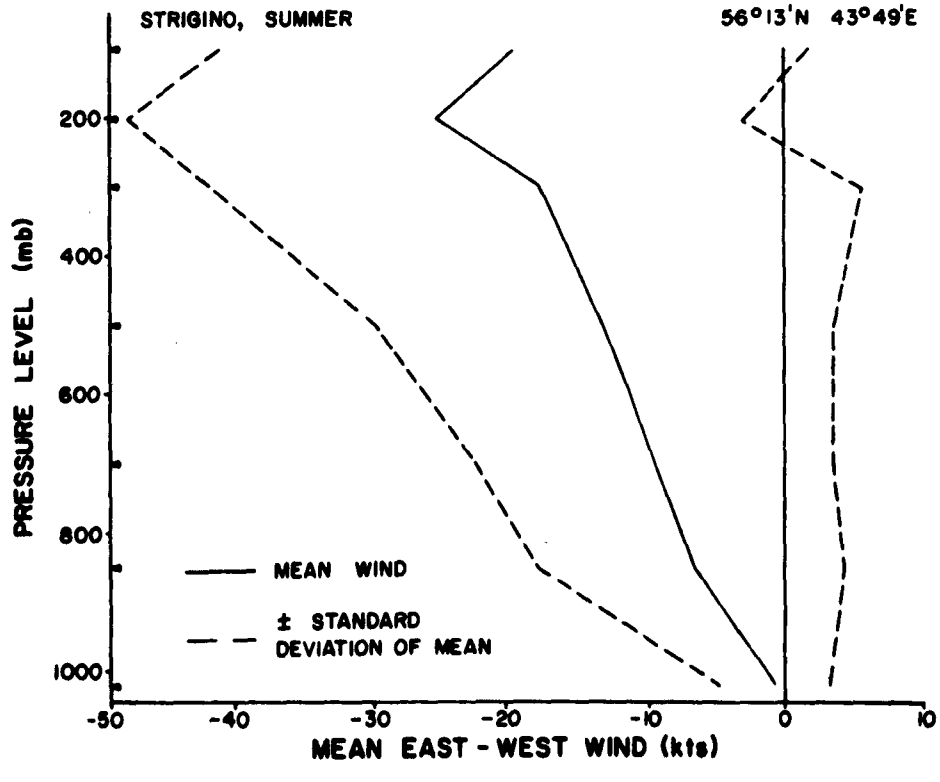


FIGURE 4

MEAN DENSITY DEPARTURES FROM ARDC 1959 MODEL ATMOSPHERE

SEASONAL DEPENDENCE PER STATION

(DATA LEVELS •)

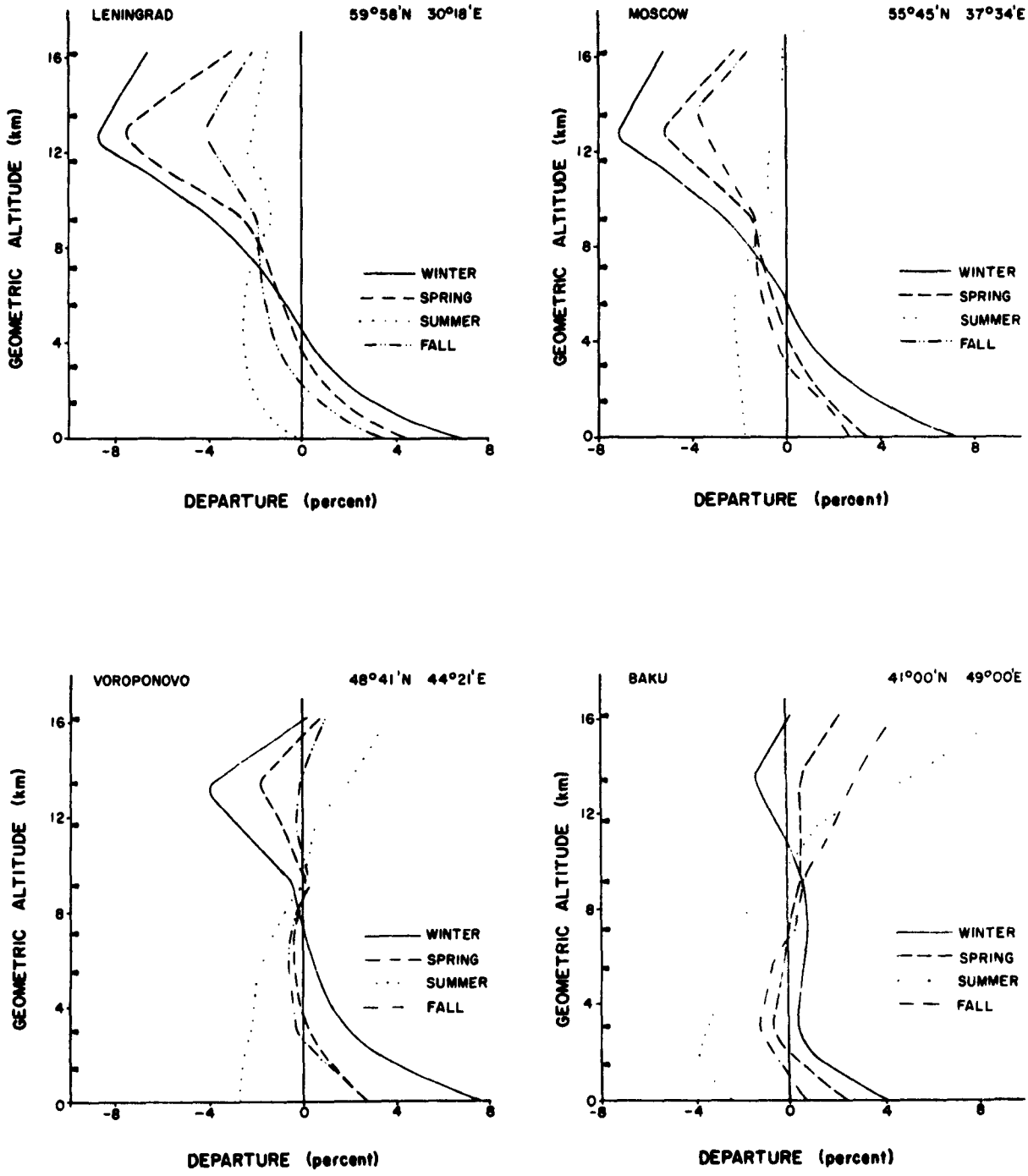


FIGURE 5

MEAN DENSITY DEPARTURES FROM ARDC 1959 MODEL ATMOSPHERE

LATITUDE DEPENDENCE PER SEASON

(DATA LEVELS •)

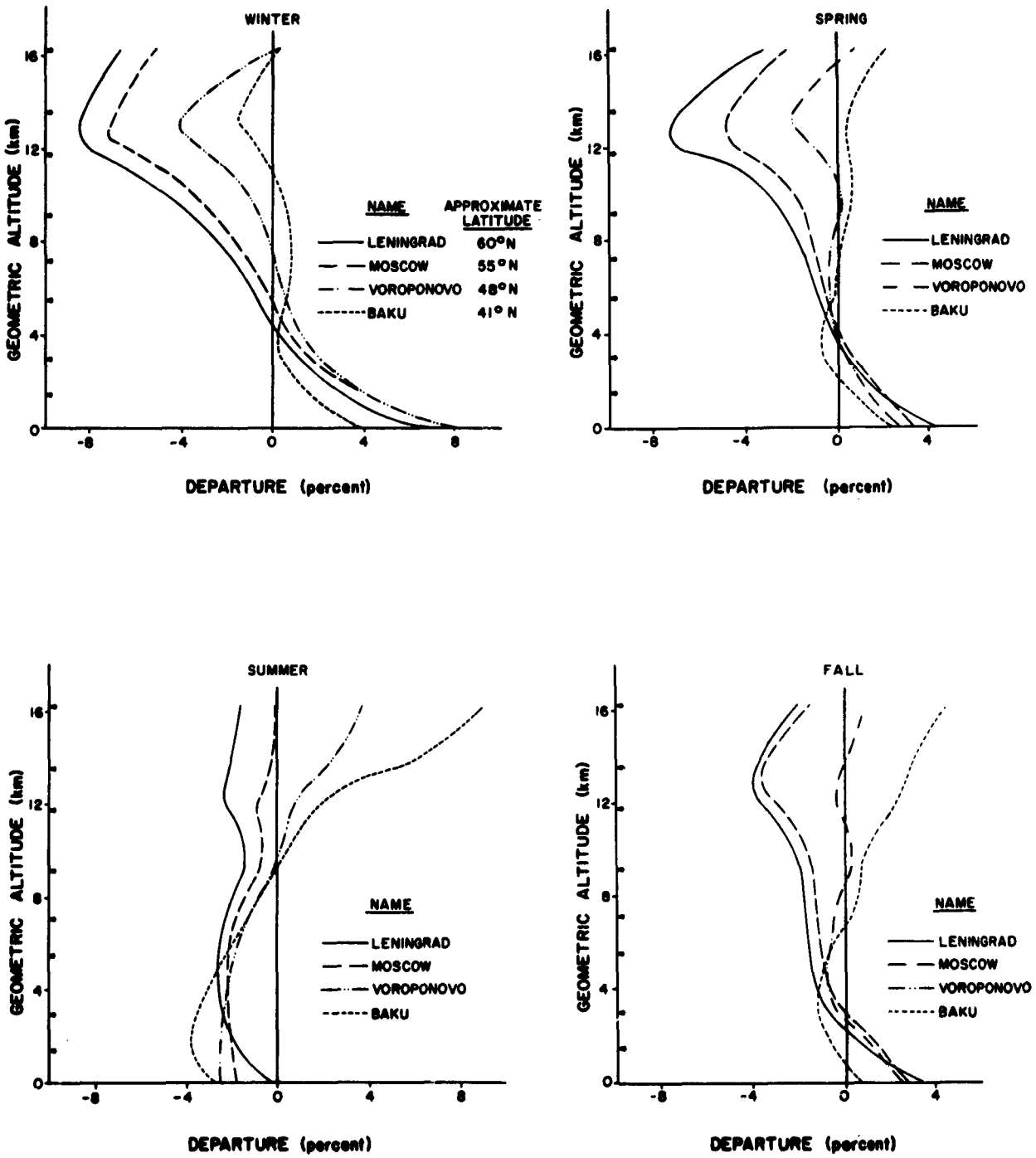
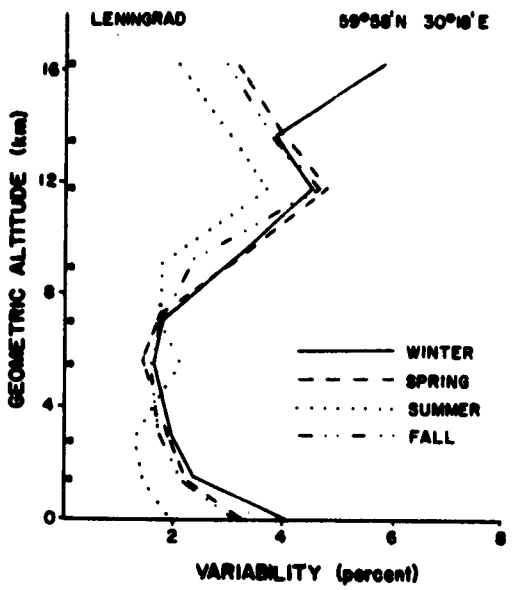


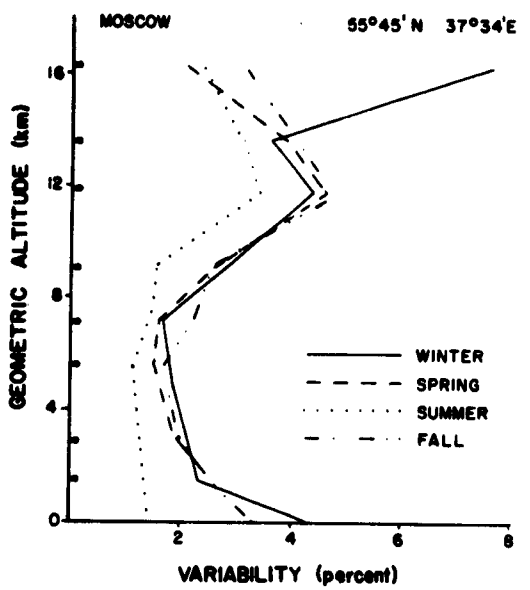
FIGURE 6

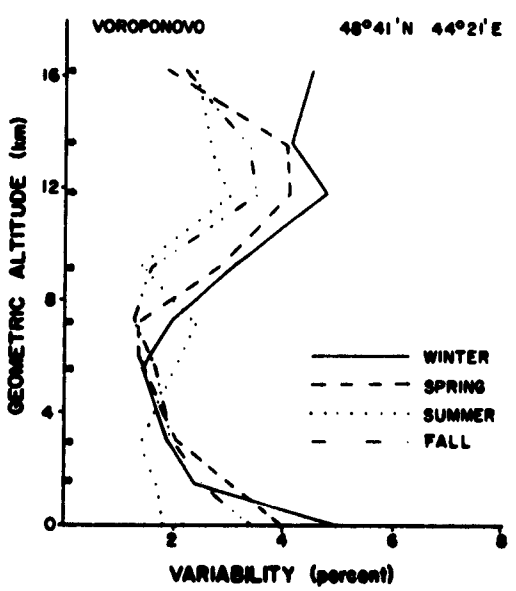
MEAN DENSITY VARIABILITY

SEASONAL DEPENDENCE PER STATION

(DATA LEVELS ≈)







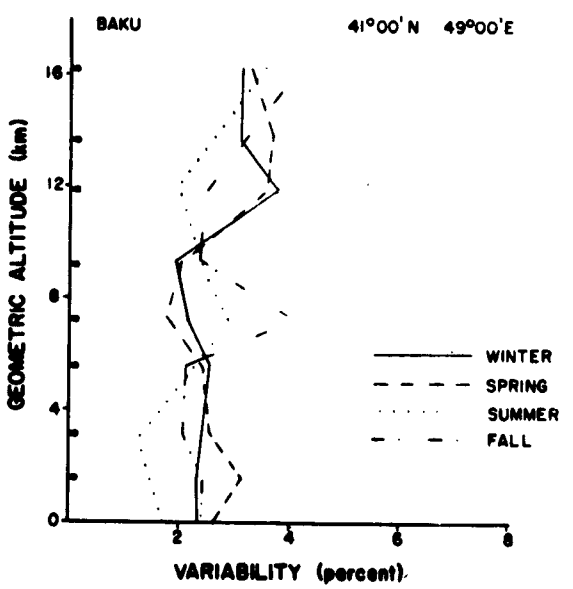


FIGURE 7

5, 6, and 7 for several typical stations, the latitudes and longitudes of which are representative of the area covered by the data of this report. Typical seasonal variations of the mean air density are shown in Figure 5. For each of the seasons, Figure 6 shows the variation of mean air density with latitude. Representative values of the percentage variability of the density are shown in Figure 7 (percent variability is defined, for any given altitude, as the standard deviation of the air density expressed as a percentage of the mean air density). The data of Figures 5 and 6 clearly demonstrate the isopycnic level occuring at altitudes of between 7 and 9 kilometers; at the isopycnic level, the departures of the mean densities from that of the standard atmosphere are usually less than 1 or 2 percent. The departures with respect to the standard atmosphere above the isopycnic level are negatively correlated with the departures below the isopycnic level; typically, the density profiles with the largest departures near the surface attain the largest departures above the isopycnic level (with the sign of the departure opposite to that of the surface departure). Above the isopycnic level, the data show (Figures 5 and 6) that the maximum deviations from the standard atmosphere (negative for the latitudes considered) occur at an altitude of approximately 13 kilometers. For the twenty-five stations, the largest departures from the standard atmosphere, at both the surface and at an altitude of about 13 kilometers, are exhibited during the winter season, whereas typically the least departures are obtained during the summer season. The data of Figure 6 show that the departures are strongly dependent on latitude, particularly above the isopycnic level. Perhaps of some interest is the fact that the mean densities below an altitude of about 3 kilometers usually tend towards a positive departure, independent of the sign of the departure above the isopycnic level. The percent variabilities of the mean seasonal densities are shown in Figure 7 for several typical stations. For the altitudes of the data considered, the maximum variabilities are exhibited at an altitude of about 12 kilometers; the variability at the surface, however, is only slightly less than at an altitude of 12 kilometers. The least variabilities are exhibited in the region of the isopycnic level. The dependences on season and latitude of the mean densities and variabilities as shown by the data of this report are in general agreement with the results reported in Reference 3.

PLANNED REPORTS OF CLIMATOLOGICAL DATA FOR ADDITIONAL STATIONS

Climatological data for additional Eurasian stations are expected to be published during the latter part of 1963. These data, applicable to 40 stations for wind and 37 stations for density, are based on about two to ten years of observation during the period of 1950 to 1962. The stations are located in the geographical area from approximately 22 degrees north to 80 degrees north and from approximately 35 degrees east to 180 degrees east.

REFERENCES

1. USAF and NWRC Reference Manual 524 of 19 July 1961

2. AOMC Report No. RR-TR-61-50, Reliability and Representativeness of Air Density Data, of 16 October 1961

3. AFCRC-TN-58-627, Behavior of Atmospheric Density Profiles, of December, 1958

4. NWRC Memo, A Preliminary Evaluation of the Reliability of Upper Air Density Data for the Eurasian Continent, by Harold L. Crutcher of March, 1963 (Unpublished)

5. Handbook of Geophysics, United States Air Force, 1960

6. NASA TN D-1641, Cross Sections of Temperature, Pressure, and Density Near the 80th Meridian West, of May, 1963

7. AOMC Climatological Ringbook, 1959-1961

8. AFCRC-TN-57-478, Maximum Variability Level of Winds, of 31 May 1957

TABULATIONS OF WIND DATA

APPENDIX A

TABLE 1

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MURMANSK, WINTER LAT 68 58 N LONG 033 03 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-7.99	-0.08	0.90	2.31	5.77	8.90	8.77
		SNS	10.53	18.83	16.04	21.70	26.49	21.73	17.38

OBSN	LEVEL	MEW	SEW							
30	SFC	-0.79	4.45		.421	.190	.349	.190	.080	-.022
598	850	-8.37	18.08	.684		.704	.514	.353	.366	.258
599	700	-7.22	16.77	.665	.732		.724	.498	.405	.274
544	500	-12.28	19.55	-.251	.460	.705		.773	.667	.473
413	300	-16.35	28.96	.056	.289	.522	.687		.828	.582
220	200	-17.96	23.11	-.056	.168	.359	.488	.556		.793
162	100	-25.58	16.05	-.132	.149	.251	.392	.427	.592	

TABLE 2

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MURMANSK, SPRING LAT 68 58 N LONG 033 03 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		1.77	4.23	4.88	5.51	6.73	8.71
		SNS		15.00	16.39	21.28	25.01	20.48	18.19
OBSN	LEVEL	MEW	SEW						
0	SFC								
618	850	-8.97	15.36		.820	.622	.428	.421	.253
619	700	-10.44	16.15	.754		.799	.549	.533	.278
536	500	-16.12	20.03	.556	.705		.766	.611	.452
350	300	-17.82	24.58	.370	.484	.703		.766	.376
188	200	-12.51	16.52	.291	.394	.569	.717		.579
177	100	-10.08	15.08	.226	.314	.372	.369	.584	

TABLE 3

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MURMANSK, SUMMER LAT 68 58 N LONG 033 03 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	0.70	0.05	-0.23	-0.44	-2.45	-3.98	-1.94
		SNS	6.13	13.30	14.66	19.98	28.60	19.04	9.32

OBSN	LEVEL	MEW	SEW							
80	SFC	-0.42	2.22		.576	.277	.082	-.116	-.023	-.057
609	850	-5.92	12.93	.107		.702	.469	.342	.280	.183
633	700	-7.77	14.10	.158	.764		.710	.579	.544	.312
584	500	-11.60	18.61	-.030	.618	.775		.732	.792	.478
388	300	-15.83	26.54	-.101	.428	.580	.785		.817	.514
205	200	-9.22	16.72	-.090	.520	.630	.741	.752		.649
189	100	-4.35	11.40	-.117	.178	.203	.194	.474	.396	

TABLE 4

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MURMANSK, FALL LAT 68 58 N LONG 033 03 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.77	1.74	5.11	7.75	12.83	14.71	11.47
			SNS	9.46	18.59	17.27	22.65	29.28	20.83	13.76
OBSN	LEVEL	MEW	SEW							
80	SFC	-2.37	5.80		.789	.556	.185	.150	.329	.406
599	850	-10.06	15.79	.370		.722	.572	.363	.374	.390
615	700	-10.20	16.30	.233	.674		.742	.490	.452	.382
572	500	-13.57	20.12	.314	.582	.706		.780	.642	.513
365	300	-16.55	27.08	.229	.319	.473	.757		.676	.514
188	200	-14.85	20.27	.207	.310	.366	.599	.642		.736
148	100	-14.23	12.39	.101	.160	.197	.479	.518	.632	

TABLE 5

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KEM PORT, WINTER LAT 64 59 N LONG 034 47 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		1.14	2.03	3.96	4.73	9.41	13.58
		SNS		16.32	19.95	22.60	29.31	26.83	23.04
OBSN	LEVEL	MEW	SEW						
0	SFC								
560	850	-5.36	16.22		.776	.612	.461	.362	.178
531	700	-7.55	20.83	.753		.680	.532	.435	.263
477	500	-9.81	21.68	.617	.650		.683	.635	.547
350	300	-14.61	27.37	.404	.442	.672		.809	.613
127	200	-24.29	21.93	.354	.346	.600	.699		.644
56	100	-27.89	21.71	.122	.198	.385	.465	.582	

TABLE 6

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KEM PORT, SPRING LAT 64 59 N LONG 034 47 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	11.24	3.10	4.41	5.64	5.33	9.92	6.26
		SNS		16.16	17.89	23.57	32.03	26.39	13.56
OBSN	LEVEL	MEW	SEW						
1	SFC	13.40							
533	850	-7.22	17.63		.752	.535	.426	.468	.150
505	700	-11.34	16.37	.657		.737	.665	.568	.312
455	500	-16.20	21.12	.437	.676		.761	.695	.412
377	300	-21.83	28.84	.388	.527	.742		.742	.318
134	200	-21.28	23.72	.221	.414	.498	.694		.412
94	100	-10.97	17.56	.052	.141	.163	.324	.472	

TABLE 7

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KEM PORT, SUMMER LAT 64 59 N LONG 034 47 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		0.50	-1.49	-2.00	-3.19	-5.13	-3.14
		SNS		14.27	16.80	19.93	29.47	23.98	15.24

OBSN	LEVEL	MEW	SEW						
0	SFC								
547	850	-0.93	15.49		.633	.574	.453	.363	.146
526	700	-3.61	17.41	.545		.699	.666	.421	.196
497	500	-7.85	20.90	.512	.568		.772	.517	.321
446	300	-13.01	29.58	.391	.517	.700		.689	.416
152	200	-14.38	23.70	.528	.537	.711	.757		.519
124	100	-5.02	14.86	.391	.303	.468	.407	.497	

TABLE 8

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KEM PORT, FALL LAT 64 59 N LONG 034 47 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		3.52	5.50	8.87	13.78	13.84	11.19
		SNS		13.95	18.50	22.46	31.21	25.22	16.92
OBSN	LEVEL	MEW	SEW						
0	SFC								
602	850	-6.19	15.28		.714	.635	.444	.409	.331
566	700	-8.58	18.16	.669		.741	.608	.502	.455
484	500	-12.74	21.36	.547	.675		.740	.627	.441
391	300	-16.95	28.28	.327	.495	.719		.579	.317
114	200	-23.03	19.91	.207	.353	.544	.667		.559
66	100	-17.80	13.09	.115	.318	.436	.419	.415	

TABLE 9

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ARKHANGELSK, WINTER LAT 64 35 N LONG 040 30 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		-1.65	-0.23	1.33	2.49	6.66	6.78
		SNS		14.94	18.24	19.64	26.33	26.19	21.04

OBSN	LEVEL	MEW	SEW						
0	SFC								
568	850	-4.77	13.84		.730	.632	.407	.290	.120
553	700	-7.02	16.22	.834		.718	.483	.414	.199
534	500	-9.69	20.65	.622	.735		.705	.656	.454
452	300	-11.94	25.36	.420	.495	.681		.841	.547
182	200	-18.12	26.35	.328	.511	.652	.755		.589
114	100	-25.02	20.55	.252	.342	.549	.653	.764	

TABLE 10

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ARKHANGELSK, SPRING LAT 64 35 N LONG 040 30 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		1.61	3.46	3.80	5.98	4.48	6.36
		SNS		13.80	15.18	18.85	23.03	22.67	23.90
OBSN	LEVEL	MEW	SEW						
0	SFC								
539	850	-6.22	16.70		.702	.594	.491	.420	.134
512	700	-9.10	15.29	.598		.779	.654	.565	.291
474	500	-13.22	18.40	.409	.680		.726	.583	.395
445	300	-17.35	21.67	.256	.572	.707		.732	.474
168	200	-17.24	29.08	.345	.484	.560	.680		.538
110	100	-12.61	18.92	.276	.438	.457	.622	.608	

TABLE 11

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ARKHANGELSK, SUMMER LAT 64 35 N LONG 040 30 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		-0.09	-0.66	0.04	-0.04	-2.27	-0.63
		SNS		11.45	15.82	17.93	23.38	20.66	15.57
OBSN	LEVEL	MEW	SEW						
0	SFC								
566	850	-2.20	11.28		.730	.623	.486	.515	.397
536	700	-4.72	13.84	.772		.625	.540	.512	.449
493	500	-8.48	20.39	.601	.715		.747	.808	.568
444	300	-10.81	24.58	.535	.652	.660		.846	.535
169	200	-8.96	20.71	.372	.610	.514	.769		.719
140	100	-5.29	15.53	.346	.458	.306	.505	.590	

TABLE 12

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ARKHANGELSK, FALL LAT 64 35 N LONG 040 30 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		2.80	5.13	7.12	9.39	10.86	16.70
		SNS		14.00	15.74	20.72	25.64	22.80	26.01

OBSN	LEVEL	MEW	SEW						
0	SFC								
614	850	-6.67	15.98		.815	.688	.508	.435	.385
586	700	-8.03	16.69	.720		.747	.557	.514	.489
546	500	-12.06	18.12	.583	.739		.705	.670	.496
487	300	-14.48	26.60	.413	.502	.732		.732	.419
143	200	-19.00	21.89	.324	.432	.650	.705		.661
104	100	-16.07	19.78	.116	.358	.491	.440	.604	

TABLE 13

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SORTOVOLA, WINTER LAT 61 43 N LONG 030 43 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	9.30	2.05	2.44	1.80	3.33	5.20	7.10
		SNS		15.17	19.28	22.62	30.30	24.34	20.67
OBSN	LEVEL	MEW	SEW						
1	SFC	-25.57							
356	850	-4.92	15.19			.741	.560	.427	.372	.291
309	700	-8.97	17.22		.725		.581	.440	.380	.396
259	500	-13.51	20.46		.506	.691		.754	.565	.416
231	300	-19.49	27.68		.323	.465	.685		.698	.504
215	200	-20.73	20.22		.282	.336	.539	.640		.632
161	100	-26.17	16.67		.203	.251	.320	.440	.585	

TABLE 14

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SORTOVOLA, SPRING LAT 61 43 N LONG 030 43 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		1.60	2.29	3.31	5.29	7.32	8.70
		SNS		13.38	15.08	21.02	27.04	20.96	18.80
OBSN	LEVEL	MEW	SEW						
0	SFC								
476	850	-5.25	13.47		.677	.476	.376	.356	.168
395	700	-9.25	14.71	.793		.667	.468	.445	.218
311	500	-12.67	19.86	.569	.744		.657	.540	.308
247	300	-13.85	26.10	.344	.585	.777		.630	.283
225	200	-15.55	19.56	.198	.475	.645	.675		.457
203	100	-12.46	16.45	.117	.211	.289	.344	.484	

TABLE 15

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SORTOVOLA, SUMMER LAT 61 43 N LONG 030 43 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS		-0.86	-1.70	-2.39	-3.26	-5.58	-2.09
			SNS		13.70	16.51	19.75	29.78	22.14	12.16
OBSN	LEVEL	MEW	SEW							
0	SFC									
523	850	-3.57	12.04			.659	.596	.428	.271	.026
442	700	-5.67	14.51		.751		.731	.581	.415	.191
372	500	-8.94	17.22		.551	.769		.779	.677	.354
264	300	-10.20	30.82		.304	.505	.714		.720	.274
231	200	-10.46	21.84		.320	.521	.705	.701		.332
223	100	-4.60	12.19		.179	.308	.326	.429	.518	

TABLE 16

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SORTOVOLA, FALL LAT 61 43 N LONG 030 43 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS		0.56	4.43	7.07	12.34	12.90	11.23
		SNS		16.17	18.08	25.34	31.42	26.74	17.40

OBSN	LEVEL	MEW	SEW						
0	SFC								
352	850	-5.68	13.57		.786	.582	.549	.463	.390
298	700	-9.02	13.82	.707		.694	.669	.622	.542
249	500	-14.09	19.00	.449	.697		.683	.586	.457
229	300	-17.24	27.32	.286	.624	.724		.766	.510
224	200	-17.55	22.48	.226	.512	.674	.719		.643
206	100	-15.56	17.15	.068	.347	.452	.547	.597	

TABLE 17

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TALLIN, WINTER LAT 59 25 N LONG 024 48 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.57	0.33	1.87	4.64	4.59	4.49	5.36
			SNS	7.54	15.08	17.66	24.35	29.42	29.03	23.32
OBSN	LEVEL	MEW	SEW							
417	SFC	0.16	6.78		.533	.473	.420	.373	.277	.255
373	850	-5.32	16.71	.607		.842	.689	.565	.476	.338
417	700	-10.06	18.61	.579	.830		.818	.696	.601	.462
417	500	-13.52	24.19	.507	.705	.852		.830	.715	.386
417	300	-18.73	30.68	.338	.557	.688	.809		.830	.473
296	200	-24.52	26.83	.347	.507	.622	.681	.800		.712
68	100	-30.43	26.87	.241	.218	.316	.414	.480	.770	

TABLE 18

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TALLIN, SPRING LAT 59 25 N LONG 024 48 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-0.08	1.75	2.62	4.12	5.54	5.01	2.88
		SNS	7.31	14.67	16.77	24.85	33.11	26.13	24.05
OBSN	LEVEL	MEW	SEW						
424	SFC	-0.47	5.97		.491	.447	.371	.222	.166	-.020
406	850	-4.10	13.54	.416		.799	.607	.468	.419	.241
424	700	-7.50	15.87	.331	.771		.811	.687	.635	.398
424	500	-12.59	21.37	.214	.567	.760		.839	.742	.567
424	300	-17.53	28.02	.167	.476	.664	.810		.813	.629
355	200	-18.67	23.76	.178	.446	.625	.708	.792		.678
83	100	-11.31	19.55	.158	.250	.333	.443	.421	.450	

TABLE 19

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TALLIN, SUMMER LAT 59 25 N LONG 024 48 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.17	-0.95	-1.20	-1.79	-4.49	-5.28	-3.79
			SNS	5.95	12.71	15.74	22.15	30.12	27.57	16.55
OBSN	LEVEL	MEW	SEW							
426	SFC	-1.57	5.40		.534	.497	.417	.351	.316	.353
395	850	-6.04	13.35	.562		.861	.739	.632	.530	.381
427	700	-8.26	14.28	.497	.823		.862	.730	.667	.511
427	500	-12.67	19.97	.322	.620	.777		.832	.752	.486
427	300	-18.23	26.27	.303	.529	.676	.780		.793	.489
309	200	-18.79	23.69	.240	.439	.586	.732	.799		.621
103	100	-11.00	19.00	.124	.472	.456	.611	.570	.551	

TABLE 20

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TALLIN, FALL LAT 59 25 N LONG 024 48 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.69	0.08	2.91	4.78	7.71	9.85	8.26
			SNS	7.31	16.26	18.21	25.03	33.69	32.02	26.25
OBSN	LEVEL	MEW	SEW							
426	SFC	-1.75	6.70		.667	.622	.519	.405	.381	.294
400	850	-10.57	14.18	.505		.848	.726	.604	.567	.432
426	700	-14.38	16.59	.471	.807		.848	.716	.682	.505
426	500	-20.83	21.90	.393	.669	.786		.826	.780	.619
426	300	-26.81	28.62	.371	.541	.679	.807		.889	.699
323	200	-29.61	27.69	.300	.468	.604	.696	.791		.769
80	100	-20.40	34.22	.170	.167	.278	.512	.560	.609	

TABLE 21

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LENINGRAD TOWN, WINTER LAT 59 58 N LONG 030 18 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-2.04	-0.66	0.56	3.36	5.62	9.93	6.74
		SNS	6.78	15.95	19.14	23.34	29.73	29.15	20.69

OBSN	LEVEL	MEW	SEW							
413	SFC	-0.51	6.47		.599	.532	.440	.344	.234	.122
392	850	-7.13	15.99	.565		.851	.730	.577	.483	.377
413	700	-9.72	18.24	.509	.841		.838	.692	.551	.393
413	500	-12.63	21.86	.402	.686	.815		.852	.702	.529
413	300	-16.83	28.97	.304	.535	.656	.835		.803	.633
240	200	-23.96	25.96	.235	.458	.536	.656	.800		.705
53	100	-22.64	19.47	.029	.128	.270	.321	.536	.614	

TABLE 22

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LENINGRAD TOWN, SPRING LAT 59 58 N LONG 030 18 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.06	0.17	0.00	1.07	2.56	3.42	5.15
			SNS	6.02	14.75	17.88	25.30	33.01	24.75	18.48
OBSN	LEVEL	MEW	SEW							
430	SFC	-0.37	5.56		.481	.409	.313	.215	.178	-.104
415	850	-5.23	14.90	.564		.814	.642	.504	.528	.285
430	700	-8.67	16.63	.487	.850		.813	.672	.647	.464
430	500	-13.89	23.35	.350	.612	.786		.865	.726	.553
430	300	-17.68	28.41	.213	.469	.647	.823		.760	.692
318	200	-22.50	22.21	.185	.377	.547	.654	.740		.731
45	100	-9.27	12.77	-.003	.371	.435	.528	.520	.489	

TABLE 23

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LENINGRAD TOWN, SUMMER LAT 59 58 N LONG 030 18 E

EAST-WEST	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
		MNS	-0.52	-2.22	-3.28	-4.12	-5.54	-5.87	0.16
		SNS	5.17	12.40	15.43	20.46	29.46	27.16	12.77

OBSN	LEVEL	MEW	SEW							
413	SFC	-0.70	4.60		.530	.434	.374	.274	.303	.320
393	850	-5.21	12.67	.521		.854	.722	.593	.616	.433
413	700	-7.38	13.81	.494	.845		.831	.714	.695	.349
413	500	-10.69	19.45	.375	.701	.838		.834	.750	.447
413	300	-15.31	27.45	.310	.571	.692	.829		.764	.427
233	200	-18.03	22.50	.321	.510	.648	.697	.749		.509
64	100	-9.00	9.60	.087	.436	.488	.539	.547	.635	

TABLE 24

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LENINGRAD TOWN, FALL LAT 59 58 N LONG 030 18 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-2.10	0.45	2.14	5.21	8.35	10.94	7.77
			SNS	5.89	15.10	17.62	24.48	31.83	31.44	17.45
OBSN	LEVEL	MEW	SEW							
421	SFC	-1.85	5.77		.669	.589	.497	.372	.420	.346
405	850	-10.38	14.77	.526		.846	.760	.625	.615	.582
421	700	-13.48	16.67	.519	.848		.839	.740	.727	.646
421	500	-19.43	22.69	.420	.693	.821		.845	.752	.687
421	300	-24.03	29.28	.341	.608	.742	.838		.838	.677
276	200	-27.28	26.87	.322	.547	.660	.751	.815		.725
66	100	-11.91	20.36	.373	.536	.553	.610	.662	.674	

TABLE 25

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

RIGA, WINTER LAT 56 58 N LONG 024 04 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-3.44	0.56	2.25	4.45	5.21	5.65	8.78
			SNS	7.85	16.03	18.23	24.00	31.55	26.29	18.19
OBSN	LEVEL	MEW	SEW							
429	SFC	-0.45	6.84		.480	.453	.353	.310	.258	.069
400	850	-7.99	17.29	.645		.807	.630	.502	.427	.218
429	700	-11.39	19.68	.565	.870		.793	.648	.542	.342
429	500	-15.45	25.24	.426	.693	.813		.842	.721	.581
429	300	-20.54	31.32	.340	.569	.711	.854		.838	.639
288	200	-23.57	27.73	.299	.545	.072	.746	.836		.610
67	100	-25.57	20.98	.259	.274	.449	.579	.592	.765	

TABLE 26

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

RIGA, SPRING LAT 56 58 N LONG 024 04 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-0.45	0.64	2.93	5.15	5.01	2.80	-4.10
		SNS	7.17	15.17	18.07	25.47	31.42	25.08	19.22
OBSN	LEVEL	MEW	SEW						
407	SFC	-0.39	5.73		.518	.420	.331	.240	.151	-.245
396	850	-5.75	13.52	.459		.818	.675	.509	.498	.111
407	700	-8.47	17.18	.424	.827		.840	.691	.662	.367
407	500	-12.55	22.60	.336	.631	.847		.816	.744	.445
407	300	-17.10	27.78	.273	.513	.724	.856		.796	.544
339	200	-18.77	21.94	.268	.501	.687	.756	.802		.708
57	100	-7.99	16.19	.077	.276	.456	.490	.513	.685	

TABLE 27

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

RIGA, SUMMER LAT 56 58 N LONG 024 04 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.70	-0.97	-1.94	-2.70	-4.20	-5.30	-3.73
			SNS	5.34	11.76	14.75	20.89	30.62	25.86	12.34
OBSN	LEVEL	MEW	SEW							
414	SFC	-1.28	4.57		.489	.449	.386	.305	.267	.116
401	850	-7.64	11.85	.498		.792	.678	.560	.509	.230
414	700	-10.12	13.48	.478	.820		.820	.714	.657	.404
414	500	-15.29	18.69	.373	.638	.808		.871	.803	.422
414	300	-20.38	26.31	.279	.459	.639	.820		.832	.438
278	200	-23.14	23.63	.289	.437	.595	.756	.798		.432
64	100	-7.36	11.70	.393	.475	.577	.657	.668	.733	

TABLE 28

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

RIGA, FALL LAT 56 58 N LONG 024 04 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-2.18	-0.54	2.12	4.70	6.39	8.28	-0.04
			SNS	7.11	15.66	18.03	26.09	31.24	28.56	16.75
OBSN	LEVEL	MEW	SEW							
400	SFC	-1.81	6.31		.617	.549	.475	.398	.372	.288
382	850	-13.89	14.63	.542		.795	.661	.615	.586	.457
400	700	-16.46	16.88	.521	.800		.806	.755	.730	.575
400	500	-21.33	22.79	.439	.639	.777		.833	.812	.695
400	300	-26.23	26.93	.338	.536	.694	.812		.870	.738
256	200	-27.80	23.65	.322	.482	.629	.714	.817		.807
50	100	-17.43	14.38	-.016	.326	.396	.445	.504	.656	

TABLE 29

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MINSK, WINTER LAT 53 52 N LONG 027 32 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-1.96	-1.01	0.95	2.95	5.25	5.60	5.56
		SNS	7.25	16.38	17.64	21.12	26.95	27.20	26.83

OBSN	LEVEL	MEW	SEW							
429	SFC	-0.93	7.03		.606	.529	.393	.278	.304	.271
407	850	-8.59	15.78	.630		.867	.686	.545	.485	.399
429	700	-11.60	17.37	.535	.882		.829	.685	.607	.572
429	500	-14.40	21.78	.414	.724	.864		.845	.757	.706
429	300	-18.65	28.78	.284	.576	.725	.838		.838	.758
281	200	-26.87	25.94	.253	.490	.656	.780	.881		.839
131	100	-31.83	19.72	.060	.446	.561	.682	.731	.787	

TABLE 30

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MINSK, SPRING LAT 53 52 N LONG 027 32 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	0.35	1.11	1.28	0.93	1.94	1.44	-1.34
		SNS	6.41	14.24	15.70	22.13	30.21	22.87	20.52

OBSN	LEVEL	MEW	SEW							
441	SFC	-0.56	5.79		.538	.451	.299	.188	.123	.079
439	850	-5.58	14.42	.584		.800	.581	.447	.428	.468
441	700	-8.30	16.22	.475	.824		.817	.692	.647	.649
441	500	-13.13	21.00	.396	.691	.840		.874	.761	.760
441	300	-16.53	27.10	.281	.575	.737	.882		.797	.710
306	200	-17.82	22.89	.271	.515	.688	.775	.802		.842
92	100	-9.95	17.93	.255	.437	.542	.643	.605	.718	

TABLE 31

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MINSK, SUMMER LAT 53 52 N LONG 027 32 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.35	-0.43	-1.63	-3.01	-4.37	-4.18	-3.54
			SNS	5.34	11.09	13.72	18.85	25.41	26.74	18.81
OBSN	LEVEL	MEW	SEW							
429	SFC	-0.97	4.78		.428	.320	.293	.193	.156	.135
408	850	-6.72	11.60	.514		.795	.652	.481	.457	.350
429	700	-9.54	13.87	.453	.834		.815	.663	.651	.544
429	500	-13.64	17.25	.371	.705	.837		.856	.811	.729
429	300	-18.71	23.98	.258	.569	.709	.845		.865	.735
202	200	-27.18	24.17	.116	.464	.595	.743	.799		.820
94	100	-19.10	16.59	.200	.257	.396	.527	.548	.689	

TABLE 32

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MINSK, FALL LAT 53 52 N LONG 027 32 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.30	0.80	2.86	4.06	5.89	9.72	7.05
			SNS	8.04	14.53	17.18	21.33	28.72	28.76	23.35
OBSN	LEVEL	MEW	SEW							
424	SFC	-2.39	6.16		.635	.556	.445	.331	.351	.308
400	850	-11.89	12.24	.631		.854	.700	.566	.544	.469
424	700	-14.44	14.05	.537	.859		.835	.698	.703	.635
424	500	-19.10	17.00	.374	.720	.832		.866	.859	.802
424	300	-24.50	22.62	.298	.554	.686	.801		.892	.781
269	200	-24.37	22.11	.257	.493	.621	.758	.842		.844
142	100	-23.45	16.26	.299	.341	.505	.604	.649	.705	

TABLE 33

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KIROV, WINTER LAT 58 39 N LONG 049 37 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-3.28	-2.68	-1.75	1.22	2.10	-1.71	0.29
			SNS	8.72	15.82	17.16	21.28	26.93	26.97	22.07
OBSN	LEVEL	MEW	SEW							
165	SFC	-1.40	8.22		.544	.490	.376	.334	.303	.038
160	850	-6.26	15.00	.616		.811	.634	.505	.524	.384
165	700	-7.77	16.75	.506	.901		.790	.663	.648	.533
164	500	-13.64	18.28	.486	.676	.727		.788	.755	.622
164	300	-19.66	26.81	.401	.492	.606	.776		.834	.564
103	200	-25.63	24.79	.240	.392	.526	.531	.625		.648
69	100	-32.68	21.88	.161	.279	.443	.408	.405	.456	

TABLE 34

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KIROV, SPRING LAT 58 39 N LONG 049 37 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.27	1.13	2.10	3.11	5.13	7.40	6.61
			SNS	7.29	12.12	15.12	21.04	26.48	23.69	12.78
OBSN	LEVEL	MEW	SEW							
214	SFC	-0.68	5.40		.581	.406	.308	.223	.216	.023
207	850	-5.54	13.41	.516		.844	.624	.534	.523	.192
214	700	-9.44	14.03	.379	.709		.804	.770	.755	.378
214	500	-16.88	17.68	.332	.552	.737		.828	.746	.460
214	300	-22.25	21.16	.170	.278	.572	.713		.828	.374
94	200	-24.95	16.85	.062	-.020	.285	.595	.766		.557
72	100	-15.74	13.13	-.021	-.047	.090	.350	.247	.363	

TABLE 35

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KIROV, SUMMER LAT 58 39 N LONG 049 37 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.04	-0.19	0.21	0.74	0.82	-2.86	0.23
			SNS	5.46	10.20	12.94	17.47	23.37	17.35	10.86
OBSN	LEVEL	MEW	SEW							
257	SFC	0.16	4.53		.479	.349	.287	.182	.129	.047
248	850	-3.01	9.66	.443		.828	.701	.490	.377	.282
257	700	-7.09	12.34	.441	.813		.846	.675	.657	.443
257	500	-10.69	16.50	.371	.659	.841		.742	.742	.507
257	300	-14.61	22.67	.249	.515	.663	.791		.768	.459
106	200	-15.43	23.96	.213	.494	.665	.675	.785		.707
78	100	-2.84	12.01	.175	.251	.357	.461	.545	.349	

TABLE 36

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KIROV, FALL LAT 58 39 N LONG 049 37 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-2.12	-0.99	0.84	4.95	6.70	5.40	5.25
			SNS	8.22	13.68	16.69	22.89	28.52	28.56	18.05
OBSN	LEVEL	MEW	SEW							
129	SFC	-3.44	7.31		.669	.583	.387	.290	.214	.120
124	850	-11.06	12.80	.478		.871	.661	.454	.491	.497
129	700	-14.83	14.86	.481	.836		.775	.662	.641	.565
129	500	-20.56	17.66	.329	.527	.680		.683	.821	.693
129	300	-25.14	23.06	.311	.429	.603	.807		.773	.572
88	200	-28.25	22.33	.166	.440	.605	.720	.724		.715
75	100	-22.09	18.92	.003	.227	.136	.206	.100	.261	

TABLE 37

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

STRIGINO, WINTER LAT 56 13 N LONG 043 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-3.17	-3.23	-1.85	-1.03	2.22	6.59	7.13
			SNS	7.83	15.68	18.03	23.10	30.29	28.72	28.91
OBSN	LEVEL	MEW	SEW							
390	SFC	-1.87	6.35		.427	.401	.361	.296	.312	.178
365	850	-9.60	15.72	.544		.880	.724	.600	.560	.436
390	700	-11.42	17.43	.515	.869		.824	.707	.657	.518
390	500	-14.83	22.93	.435	.725	.847		.819	.827	.596
390	300	-20.21	30.27	.360	.616	.720	.825		.837	.605
166	200	-28.91	29.20	.182	.527	.602	.750	.792		.722
70	100	-24.62	28.89	.069	.510	.598	.664	.741	.753	

TABLE 38

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

STRIGINO, SPRING LAT 56 13 N LONG 043 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.75	-2.18	-2.88	-3.40	-4.59	3.07	-1.09
			SNS	7.15	14.77	18.19	24.17	30.76	28.87	21.04
OBSN	LEVEL	MEW	SEW							
402	SFC	-0.85	6.14		.552	.510	.416	.341	.262	.274
379	850	-7.40	14.09	.449		.897	.745	.625	.551	.526
402	700	-10.14	15.68	.441	.818		.845	.721	.674	.585
402	500	-14.01	20.07	.320	.625	.787		.848	.770	.697
402	300	-18.63	25.53	.253	.492	.667	.815		.811	.723
111	200	-23.10	22.66	.198	.451	.681	.744	.780		.750
46	100	-17.66	21.76	.117	.191	.606	.628	.723	.797	

TABLE 39

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

STRIGINO, SUMMER LAT 56 13 N LONG 043 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.31	2.16	0.17	0.02	-0.95	-4.72	-4.14
			SNS	5.13	11.33	14.84	18.58	24.46	23.06	23.28
OBSN	LEVEL	MEW	SEW							
366	SFC	-1.15	4.24		.525	.434	.348	.329	.252	.143
297	850	-6.98	10.94	.478		.869	.705	.608	.392	.360
365	700	-9.58	13.12	.400	.808		.835	.744	.571	.460
365	500	-13.33	17.00	.322	.593	.751		.828	.607	.410
365	300	-18.15	24.05	.283	.493	.655	.757		.809	.458
94	200	-25.78	22.62	.244	.498	.699	.766	.792		.596
39	100	-20.01	21.89	.176	.424	.391	.328	.350	.480	

TABLE 40

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

STRIGINO, FALL LAT 56 13 N LONG 043 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-2.00	0.78	2.12	2.27	3.56	3.42	9.42
			SNS	7.09	14.07	16.50	22.99	28.99	30.87	30.64
OBSN	LEVEL	MEW	SEW							
363	SFC	-2.58	5.54		.554	.527	.470	.413	.284	.249
307	850	-13.74	12.38	.482		.842	.725	.633	.529	.457
363	700	-14.42	16.32	.478	.857		.870	.765	.633	.544
363	500	-19.45	19.55	.366	.770	.848		.819	.678	.619
363	300	-24.54	25.10	.299	.657	.758	.838		.827	.646
126	200	-28.33	25.78	.143	.566	.595	.700	.809		.752
44	100	-27.77	20.56	.140	.241	.590	.657	.609	.783	

TABLE 41

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KAZAN, WINTER LAT 55 47 N LONG 049 11 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-3.07	-0.95	0.23	1.55	4.06	7.23	5.81
			SNS	7.36	13.95	15.91	21.72	29.13	29.40	29.48
OBSN	LEVEL	MEW	SEW							
232	SFC	-0.93	6.94		.440	.378	.261	.150	.143	.145
214	850	-7.46	15.37	.504		.812	.625	.429	.497	.475
232	700	-10.40	19.22	.457	.837		.753	.579	.589	.619
232	500	-14.77	22.44	.298	.659	.774		.801	.728	.661
232	300	-20.77	29.61	.245	.597	.711	.804		.827	.750
137	200	-26.08	28.19	.268	.452	.647	.746	.827		.789
42	100	-26.48	22.83	.095	.502	.536	.616	.725	.642	

TABLE 42

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WIT. CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KAZAN, SPRING LAT 55 47 N LONG 049 11 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.69	-1.53	-1.55	-1.61	-0.78	5.36	4.02
			SNS	7.05	13.64	16.05	20.62	26.39	28.39	18.09
OBSN	LEVEL	MEW	SEW							
290	SFC	-0.62	5.60		.483	.397	.265	.181	.164	.017
275	850	-7.31	12.73	.355		.845	.675	.585	.638	.388
290	700	-10.51	16.34	.300	.716		.816	.698	.721	.433
290	500	-14.81	21.14	.201	.516	.715		.818	.847	.576
290	300	-19.72	27.14	.119	.423	.625	.797		.900	.518
100	200	-26.68	23.34	.102	.409	.639	.729	.794		.564
34	100	-14.09	18.32	.225	.279	.392	.336	.436	.443	

TABLE 43

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KAZAN, SUMMER LAT 55 47 N LONG 049 11 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.23	1.98	2.41	3.09	3.46	-2.41	-0.29
			SNS	5.50	12.42	14.81	18.75	25.63	22.62	15.70
OBSN	LEVEL	MEW	SEW							
335	SFC	-1.17	4.76		.513	.370	.323	.281	.123	.234
290	850	-5.60	11.99	.447		.814	.701	.566	.396	.344
334	700	-9.52	14.16	.382	.671		.827	.708	.583	.412
334	500	-13.81	17.93	.328	.600	.813		.791	.720	.470
334	300	-18.23	22.66	.250	.511	.700	.824		.770	.377
110	200	-24.85	24.89	.328	.405	.677	.763	.771		.462
39	100	-16.07	17.95	.306	.588	.664	.697	.773	.670	

TABLE 44

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KAZAN, FALL LAT 55 47 N LONG 049 11 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-2.45	-0.33	1.30	3.63	5.81	5.95	9.73
		SNS	7.03	13.00	14.79	20.13	28.17	27.63	21.04
OBSN	LEVEL	MEW	SEW						
264	SFC	-2.27	5.79		.489	.481	.386	.281	.253	.348
236	850	-12.69	13.52	.394		.775	.640	.482	.478	.300
264	700	-16.65	15.27	.371	.816		.759	.653	.622	.523
264	500	-22.81	18.32	.308	.675	.752		.775	.723	.521
264	300	-27.26	22.89	.254	.540	.631	.745		.833	.652
147	200	-30.99	25.88	.141	.427	.574	.713	.775		.616
46	100	-24.40	24.03	.393	.489	.460	.530	.503	.500	

TABLE 45

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MOSCOW, WINTER LAT 55 45 N LONG 037 34 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.63	-1.59	0.00	0.87	2.58	7.99	7.07
			SNS	6.18	16.75	18.92	24.40	31.79	29.40	23.37
OBSN	LEVEL	MEW	SEW							
443	SFC	-0.54	5.56		.479	.433	.361	.285	.311	.169
429	850	-8.51	15.82	.537		.866	.688	.551	.592	.433
443	700	-11.72	17.39	.453	.814		.818	.691	.708	.550
443	500	-15.33	22.85	.392	.694	.845		.860	.827	.641
443	300	-19.55	28.46	.283	.557	.725	.853		.872	.685
207	200	-29.98	23.35	.218	.542	.693	.778	.827		.821
146	100	-32.23	20.69	.200	.450	.533	.528	.561	.674	

TABLE 46

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MOSCOW, SPRING LAT 55 45 N LONG 037 34 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.43	-1.42	-2.16	-3.44	-4.26	-1.20	3.42
			SNS	6.92	15.78	18.79	24.17	30.39	25.45	17.29
OBSN	LEVEL	MEW	SEW							
446	SFC	-0.14	5.81		.572	.486	.330	.249	.150	-.097
441	850	-5.42	14.09	.554		.841	.673	.568	.558	.370
447	700	-8.57	16.40	.478	.770		.840	.729	.702	.553
447	500	-12.51	21.37	.365	.618	.833		.901	.828	.718
447	300	-16.63	26.77	.247	.487	.712	.869		.839	.691
158	200	-22.42	21.82	.201	.459	.664	.742	.727		.808
91	100	-14.98	17.68	-.010	.103	.283	.282	.359	.543	

TABLE 47

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MOSCOW, SUMMER LAT 55 45 N LONG 037 34 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	0.00	-0.85	-1.69	-3.21	-3.21	-3.65	-1.67
		SNS	4.60	12.18	14.61	17.66	24.62	21.45	12.24

OBSN	LEVEL	MEW	SEW							
448	SFC	-0.58	4.02		.392	.360	.247	.172	.201	.239
431	850	-6.02	11.21	.467		.835	.677	.483	.444	.356
448	700	-9.62	13.45	.467	.824		.834	.660	.621	.377
448	500	-13.58	17.25	.383	.703	.821		.837	.776	.396
448	300	-18.58	23.63	.285	.543	.665	.822		.811	.473
152	200	-27.77	20.30	.394	.431	.569	.699	.743		.457
90	100	-9.37	10.96	.396	.419	.430	.435	.482	.616	

TABLE 48

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

MOSCOW, FALL LAT 55 45 N LONG 037 34 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-1.22	0.31	1.75	2.72	4.97	8.82	7.09
		SNS	10.90	15.39	18.42	24.05	31.46	28.06	18.89

OBSN	LEVEL	MEW	SEW						
449	SFC	-1.87	5.01		.307	.290	.238	.186	.340	.278
438	850	-12.42	13.66	.462		.822	.698	.547	.658	.514
449	700	-15.78	15.74	.417	.833		.851	.711	.791	.680
449	500	-21.02	19.74	.345	.719	.829		.869	.862	.749
449	300	-24.50	24.77	.248	.556	.656	.809		.901	.765
189	200	-26.91	21.68	.296	.566	.679	.808	.822		.806
155	100	-22.09	15.16	.225	.371	.528	.563	.541	.605	

TABLE 49

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SVERDLOVSK, WINTER LAT 56 48 N LONG 060 38 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-2.18	-1.44	-2.06	-2.04	1.19	2.78	6.04
		SNS	5.89	16.61	18.28	24.00	29.30	26.00	19.78
OBSN	LEVEL	MEW	SEW						
416	SFC	-1.48	5.98		.418	.322	.250	.138	.255	.130
386	850	-11.00	16.26	.298		.827	.677	.560	.534	.396
416	700	-12.98	17.62	.184	.775		.827	.716	.655	.457
416	500	-17.14	24.40	.142	.631	.786		.842	.741	.536
416	300	-22.33	29.46	.088	.493	.665	.821		.773	.641
178	200	-27.90	25.01	.012	.389	.607	.728	.789		.638
83	100	-37.66	19.12	.073	.269	.294	.480	.533	.611	

TABLE 50

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SVERDLOVSK, SPRING LAT 56 48 N LONG 060 38 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-1.52	1.57	1.55	2.68	3.89	13.02	7.97
		SNS	6.35	12.98	15.93	23.45	28.39	23.92	21.39
OBSN	LEVEL	MEW	SEW						
395	SFC	-1.09	5.95		.336	.319	.224	.133	.176	.167
331	850	-9.21	14.22	.418		.778	.619	.520	.502	.171
395	700	-13.10	15.35	.356	.754		.808	.706	.660	.363
395	500	-19.68	21.65	.265	.597	.803		.842	.788	.506
395	300	-25.90	28.45	.163	.432	.630	.826		.872	.555
83	200	-29.09	19.22	.284	.386	.599	.732	.787		.551
29	100	-17.21	19.12	.142	.216	.255	.138	.363	.463	

TABLE 51

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SVERDLOVSK, SUMMER LAT 56 48 N LONG 060 38 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	0•25	4•78	5•21	6•43	8•16	4•14	3•26
		SNS	5•03	11•39	14•67	20•28	28•46	23•90	11•76

OBSN	LEVEL	MEW	SEW							
388	SFC	-0•87	4•14		•313	•237	•174	•120	•207	•128
378	850	-4•47	11•95	•411		•749	•629	•526	•558	•271
389	700	-7•05	15•17	•352	•805		•822	•746	•781	•385
389	500	-10•80	19•18	•316	•708	•854		•836	•837	•381
389	300	-14•65	25•76	•184	•567	•714	•839		•856	•402
134	200	-13•93	21•98	•196	•566	•700	•805	•879		•464
94	100	-6•39	13•70	•249	•354	•210	•209	•203	•236	

TABLE 52

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SVERDLOVSK, FALL LAT 56 48 N LONG 060 38 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.26	3.26	2.60	3.98	6.26	2.06	2.02
			SNS	6.06	15.52	18.13	24.35	31.05	24.03	14.79
OBSN	LEVEL	MEW	SEW							
412	SFC	-2.80	5.75		.499	.470	.418	.288	.416	.237
402	850	-13.93	15.68	.544		.805	.665	.530	.509	.386
412	700	-16.94	17.12	.417	.789		.794	.684	.693	.565
412	500	-23.01	22.73	.302	.645	.776		.820	.771	.595
412	300	-28.21	27.94	.205	.513	.626	.820		.888	.606
159	200	-34.00	20.15	.120	.399	.490	.701	.776		.708
84	100	-25.53	13.15	.129	.331	.469	.567	.596	.570	

TABLE 53

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

UFA, WINTER — LAT 54 45 N — LONG 056 00 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-3.15	-6.55	-7.71	-8.26	-8.45	-7.29	-16.48
			SNS	8.37	15.16	16.17	22.03	30.25	23.72	18.79
OBSN	LEVEL	MEW	SEW							
156	SFC	-0.80	6.16		.555	.416	.261	.212	.093	.325
143	850	-4.39	12.44	.505		.807	.534	.376	.346	.281
156	700	-8.57	17.64	.426	.831		.749	.630	.540	.200
156	500	-12.88	23.12	.352	.616	.718		.748	.549	.232
156	300	-19.82	28.78	.299	.522	.635	.825		.782	.193
75	200	-30.62	24.15	.249	.453	.654	.706	.771		.141
19	100	-35.36	24.23	.283	.644	.767	.662	.524	.509	

TABLE 54

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

UFA, SPRING LAT 54 45 N LONG 056 00 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-1.87	-3.19	-2.64	-1.32	-1.77	0.51	-0.70
		SNS	6.41	13.99	16.67	19.72	24.46	23.70	18.44
OBSN	LEVEL	MEW	SEW						
260	SFC	-0.10	5.15		.396	.314	.227	.170	.146	.062
251	850	-5.50	12.18	.425		.834	.703	.588	.643	.295
260	700	-9.00	14.26	.316	.775		.835	.709	.759	.444
260	500	-13.19	19.24	.254	.558	.746		.820	.779	.560
260	300	-19.43	22.44	.221	.345	.575	.773		.818	.601
78	200	-24.70	21.16	-.024	.355	.635	.726	.769		.572
47	100	-19.49	18.50	-.138	.139	.487	.510	.539	.459	

TABLE 55

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

UFA, SUMMER LAT 54 45 N LONG 056 00 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.33	1.92	3.32	3.85	5.09	1.05	0.51
			SNS	5.25	11.77	14.09	18.87	25.41	24.25	10.03
OBSN	LEVEL	MEW	SEW							
302	SFC	-0.37	4.39		.367	.363	.281	.284	.095	.062
291	850	-4.35	10.16	.462		.776	.695	.586	.484	.080
302	700	-7.05	14.30	.386	.783		.833	.702	.648	.386
302	500	-10.61	17.49	.371	.681	.818		.831	.768	.321
302	300	-13.74	22.40	.267	.479	.654	.766		.802	.544
62	200	-16.13	24.17	.313	.571	.705	.752	.770		.791
20	100	-10.22	11.95	.124	.223	.423	.518	.506	.775	

TABLE 56

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

UFA, FALL LAT 54 45 N LONG 056 00 E

		NORTH SOUTH	LEVEL	SFC	850	70C	500	300	200	100
EAST-WEST			MNS	-2.02	-2.20	-1.52	-1.30	0.60	-2.25	-6.10
			SNS	7.13	14.09	17.49	23.86	29.83	25.96	15.33
OBSN	LEVEL	MEW	SEW							
178	SFC	-2.53	5.60		.642	.557	.476	.438	.307	.403
167	850	-10.30	12.36	.449		.858	.673	.646	.390	.347
178	700	-14.90	15.10	.376	.855		.738	.657	.541	.365
178	500	-22.40	20.30	.318	.695	.787		.802	.654	.574
178	300	-26.77	24.29	.279	.583	.692	.729		.837	.555
77	200	-32.89	17.33	.429	.503	.588	.546	.569		.673
27	100	-23.16	14.61	.095	.392	.478	.402	.489	.563	

TABLE 57

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KUIBISHEV, WINTER LAT 53 14 N LONG 050 10 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-2.27	-2.86	-1.61	0.60	2.80	4.00	5.40
			SNS	7.66	14.92	18.03	23.32	29.51	27.77	22.21
OBSN	LEVEL	MEW	SEW							
384	SFC	-1.09	6.86		.431	.334	.230	.166	.131	.050
353	850	-9.52	15.27	.528		.795	.644	.540	.481	.448
384	700	-12.80	17.64	.464	.830		.809	.684	.633	.463
384	500	-18.24	22.75	.378	.701	.833		.835	.802	.652
383	300	-23.76	27.90	.317	.581	.734	.841		.877	.661
164	200	-30.76	25.43	.257	.457	.702	.749	.845		.713
94	100	-31.07	21.51	.081	.199	.496	.551	.497	.693	

TABLE 58

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KUIBISHEV, SPRING LAT 53 14 N LONG 050 10 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.31	-3.19	-3.07	-1.87	-1.36	4.41	6.84
			SNS	7.23	14.69	17.08	21.37	24.85	26.02	21.66
OBSN	LEVEL	MEW	SEW							
386	SFC	-0.10	6.14		.417	.316	.267	.229	.196	.276
347	850	-5.81	14.26	.487		.830	.706	.533	.515	.470
386	700	-9.79	16.44	.452	.821		.809	.661	.593	.572
386	500	-14.18	20.05	.434	.721	.833		.803	.730	.733
386	300	-18.54	25.59	.313	.533	.671	.824		.804	.715
99	200	-20.81	25.47	.335	.515	.683	.791	.869		.846
52	100	-21.61	23.92	.350	.588	.680	.712	.750	.814	

TABLE 59

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KUIBISHEV, SUMMER LAT 53 14 N LONG 050 10 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	1.20	1.87	1.13	0.78	1.79	-0.87	3.13
			SNS	4.95	11.83	14.98	19.00	24.52	24.75	20.96
OBSN	LEVEL	MEW	SEW							
406	SFC	-0.35	4.04		.376	.303	.268	.213	.086	.018
323	850	-5.77	10.47	.287		.799	.711	.554	.473	.477
406	700	-9.05	12.78	.262	.800		.874	.726	.677	.677
406	500	-13.02	17.37	.223	.678	.834		.830	.772	.752
406	300	-17.55	23.49	.206	.537	.714	.823		.903	.854
134	200	-23.34	24.77	.277	.628	.772	.836	.898		.907
73	100	-24.89	23.32	.369	.650	.735	.778	.779	.835	

TABLE 60

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KUIBISHEV, FALL LAT 53 14 N LONG 050 10 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.05	0.95	1.69	4.14	5.89	2.93	3.81
			SNS	7.25	14.75	16.85	22.21	28.04	29.49	22.42
OBSN	LEVEL	MEW	SEW							
407	SFC	-1.73	5.56		.453	.370	.224	.210	.099	.172
359	850	-11.68	14.20	.529		.782	.644	.606	.485	.292
407	700	-15.27	15.70	.426	.780		.829	.709	.669	.613
407	500	-22.40	20.77	.358	.605	.770		.823	.807	.703
407	300	-26.74	26.25	.218	.471	.616	.750		.840	.739
166	200	-34.68	25.82	.172	.390	.497	.682	.814		.747
86	100	-33.54	20.91	.250	.228	.452	.580	.719	.695	

TABLE 61

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KYEV, WINTER LAT 50 24 N LONG 030 27 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.17	0.27	1.32	3.13	3.91	7.11	7.09
			SNS	7.13	15.52	16.36	22.01	28.56	24.56	20.77
OBSN	LEVEL	MEW	SEW							
414	SFC	-1.24	7.11		.620	.466	.285	.179	.142	.063
386	850	-9.00	14.36	.545		.789	.549	.354	.279	.273
413	700	-13.41	16.34	.504	.830		.769	.601	.564	.452
413	500	-18.85	21.37	.337	.646	.774		.811	.751	.631
412	300	-23.47	27.98	.248	.492	.615	.811		.829	.613
209	200	-25.80	24.07	.120	.518	.592	.770	.800		.699
60	100	-25.28	14.28	-.094	.174	.284	.385	.424	.593	

TABLE 62

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KYEV, SPRING LAT 50 24 N LONG 030 27 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.04	0.93	0.56	0.56	0.84	-0.06	3.11
			SNS	6.94	13.97	16.01	21.35	26.89	23.26	18.48
OBSN	LEVEL	MEW	SEW							
417	SFC	-0.08	5.79		.559	.398	.280	.120	.052	-.103
408	850	-3.13	13.78	.588		.728	.535	.373	.291	-.060
417	700	-6.61	17.02	.447	.786		.814	.656	.633	.565
417	500	-11.50	23.22	.375	.656	.828		.782	.690	.686
417	300	-16.34	29.53	.268	.572	.747	.867		.734	.704
213	200	-17.78	23.80	.212	.498	.651	.714	.748		.727
48	100	-11.13	19.06	-.045	.394	.651	.655	.617	.711	

TABLE 63

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KYEV, SUMMER LAT 50 24 N LONG 030 27 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	1.05	1.13	0.56	-0.91	0.06	-1.67	-3.40
			SNS	5.21	10.57	12.38	16.46	22.27	23.47	11.97
OBSN	LEVEL	MEW	SEW							
432	SFC	-0.82	4.51		.432	.262	.215	.121	.168	-.138
417	850	-4.33	11.35	.508		.740	.587	.434	.372	.104
432	700	-7.62	13.62	.402	.846		.791	.641	.639	.413
432	500	-11.83	18.01	.366	.759	.825		.807	.765	.585
432	300	-17.39	23.04	.292	.642	.723	.840		.765	.623
165	200	-30.87	20.03	.122	.463	.553	.669	.733		.638
57	100	-16.75	13.23	.131	.391	.271	.478	.522	.483	

TABLE 64

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KYEV, FALL LAT 50 24 N LONG 030 27 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.49	2.00	2.33	3.61	5.27	9.00	9.17
			SNS	5.83	13.31	14.88	19.18	26.11	27.94	16.19
OBSN	LEVEL	MEW	SEW							
419	SFC	-1.34	5.73		.487	.378	.226	.145	.379	.164
379	850	-7.67	12.69	.587		.808	.580	.440	.553	.288
419	700	-12.12	14.16	.508	.785		.768	.659	.711	.567
419	500	-18.54	18.46	.387	.616	.756		.821	.828	.623
419	300	-23.88	25.43	.287	.488	.613	.761		.853	.606
180	200	-26.62	23.24	.148	.438	.571	.724	.841		.729
87	100	-19.57	12.12	.121	.206	.391	.479	.470	.534	

TABLE 65

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LVOV, WINTER LAT 49 49 N LONG 023 57 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.79	0.10	1.85	2.51	3.19	5.65	8.70
			SNS	6.57	13.19	15.39	20.93	27.09	26.35	20.27
OBSN	LEVEL	MEW	SEW							
381	SFC	-1.44	6.90		.439	.264	.193	.148	.190	-.005
352	850	-10.10	17.90	.477		.783	.520	.409	.449	.275
379	700	-11.83	17.04	.407	.723		.677	.571	.587	.322
379	500	-17.02	21.99	.260	.535	.757		.768	.768	.415
379	300	-19.39	29.84	.180	.410	.613	.766		.751	.458
210	200	-19.53	26.83	.201	.363	.618	.724	.779		.637
62	100	-21.14	19.86	.281	.300	.449	.448	.509	.560	

TABLE 66

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LVOV, SPRING LAT 49 49 N LONG 023 57 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.45	1.67	2.08	2.99	1.96	0.14	1.71
			SNS	5.62	12.18	14.30	19.94	25.88	23.39	16.63
OBSN	LEVEL	MEW	SEW							
415	SFC	-0.91	5.09		.532	.368	.242	.125	.056	-.068
396	850	-5.13	13.95	.479		.729	.521	.393	.276	-.015
415	700	-6.82	16.11	.428	.827		.745	.616	.536	.433
415	500	-10.34	22.83	.328	.611	.787		.793	.678	.419
415	300	-14.94	28.23	.214	.495	.674	.828		.726	.435
264	200	-13.52	25.88	.262	.471	.645	.770	.806		.567
40	100	-3.81	16.71	.304	.249	.397	.587	.637	.721	

TABLE 67

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LVOV, SUMMER LAT 49 49 N LONG 023 57 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.02	0.45	-1.07	-2.04	-2.78	-8.28	-11.37
			SNS	4.12	10.08	12.30	15.64	22.34	25.20	17.66
OBSN	LEVEL	MEW	SEW							
409	SFC	-1.30	4.00		.336	.233	.150	.083	-.042	-.078
379	850	-5.71	10.84	.380		.680	.480	.313	.304	.000
409	700	-8.34	13.41	.323	.774		.752	.613	.580	.380
409	500	-12.71	17.20	.237	.679	.821		.769	.710	.594
409	300	-18.30	23.04	.200	.542	.663	.780		.775	.680
200	200	-28.12	23.47	.077	.397	.580	.696	.666		.723
44	100	-18.71	16.36	-.178	-.105	.226	.288	.525	.436	

TABLE 68

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

LVOV, FALL LAT 49 49 N LONG 023 57 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-1.36	-0.04	1.11	2.86	3.36	4.41	5.13
		SNS	4.99	11.33	13.72	19.53	27.59	25.51	19.51

OBSN	LEVEL	MEW	SEW							
383	SFC	-0.91	5.13		.393	.311	.236	.122	.089	.082
334	850	-9.17	11.77	.496		.627	.515	.345	.405	.328
383	700	-11.66	13.76	.393	.745		.772	.600	.564	.558
383	500	-17.72	18.65	.282	.497	.733		.790	.725	.563
383	300	-21.90	25.88	.219	.367	.587	.760		.843	.677
205	200	-21.92	24.87	.299	.405	.595	.685	.781		.747
65	100	-21.22	16.48	.203	.213	.326	.337	.471	.577	

TABLE 69

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ODESSA, WINTER LAT 46 29 N LONG 030 38 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	1.19	1.61	0.93	1.05	2.68	4.12	5.30
		SNS	7.77	13.60	13.74	20.17	27.40	28.29	20.83
OBSN	LEVEL	MEW	SEW						
353	SFC	-0.33	6.47		.431	.233	-.043	-.063	.014	.034
315	850	-6.20	12.77	.495		.689	.390	.259	.280	.403
353	700	-12.44	15.06	.440	.675		.684	.543	.522	.500
353	500	-20.36	21.61	.309	.538	.742		.745	.694	.613
353	300	-24.17	27.49	.188	.420	.625	.776		.775	.556
180	200	-24.87	29.20	.198	.438	.607	.734	.797		.703
60	100	-32.51	20.50	.055	.219	.431	.388	.512	.549	

TABLE 70

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ODESSA, SPRING LAT 46 29 N LONG 030 38 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	0.84	0.99	-0.43	-0.72	-2.27	-2.12	2.04
		SNS	7.23	12.18	16.50	18.32	25.41	23.94	11.48
OBSN	LEVEL	MEW	SEW						
366	SFC	-0.16	4.84		.499	.313	.190	.112	-.012	.056
344	850	-2.58	12.84	.484		.608	.427	.324	.207	.276
366	700	-6.63	16.15	.387	.753		.621	.526	.390	.174
366	500	-11.46	22.03	.301	.626	.783		.821	.689	.219
365	300	-15.12	29.11	.163	.539	.699	.820		.754	.187
160	200	-13.74	27.67	.226	.505	.656	.759	.790		.279
20	100	-5.38	9.25	.256	.137	.050	.017	.293	.188	

TABLE 71

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ODESSA, SUMMER LAT 46 29 N LONG 030 38 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	1.88	2.33	1.79	0.76	-0.41	-4.41	5.95
		SNS	5.65	9.68	10.32	14.94	21.92	22.75	22.21

OBSN	LEVEL	MEW	SEW							
411	SFC	-0.99	3.89		.453	.265	.122	.001	.002	.303
392	850	-1.07	10.22	.422		.673	.517	.394	.296	.326
411	700	-4.78	12.32	.338	.787		.764	.598	.559	.635
411	500	-10.41	16.30	.345	.686	.782		.771	.656	.658
411	300	-18.89	24.05	.276	.505	.652	.780		.693	.352
168	200	-31.52	21.39	.236	.200	.434	.503	.632		.541
29	100	-21.96	18.28	-.004	.056	.209	-.051	-.050	.080	

TABLE 72

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ODESSA, FALL LAT 46 29 N LONG 030 38 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	2.22	3.23	2.18	3.28	3.92	4.41	2.91
		SNS	6.72	11.79	12.67	18.36	26.39	23.74	11.93
OBSN	LEVEL	MEW	SEW						
357	SFC	0.14	5.19		.431	.306	.163	.138	.092	.350
319	850	-3.89	10.86	.395		.750	.608	.511	.407	.243
356	700	-9.46	13.48	.392	.784		.783	.684	.641	.317
357	500	-15.17	19.97	.314	.693	.788		.794	.710	.356
357	300	-19.22	25.78	.332	.585	.681	.763		.745	.252
158	200	-22.67	23.06	.195	.387	.536	.605	.704		.411
52	100	-20.13	14.84	.143	.411	.526	.609	.518	.521	

TABLE 73

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SARATOV, WINTER LAT 51 34 N LONG 046 02 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-1.71	-2.20	-2.20	-0.66	1.09	5.19	3.67
			SNS	8.06	14.55	14.51	18.11	23.39	28.23	23.39
OBSN	LEVEL	MEW	SEW							
385	SFC	-0.43	6.55		.503	.422	.315	.213	.162	-.074
351	850	-6.22	15.47	.516		.859	.702	.539	.406	.224
385	700	-9.33	15.97	.418	.882		.816	.639	.495	.280
385	500	-15.45	20.21	.323	.754	.821		.796	.693	.595
385	300	-19.43	24.46	.252	.651	.709	.848		.816	.742
155	200	-26.17	24.13	.105	.511	.581	.745	.828		.787
80	100	-25.34	20.21	.172	.367	.425	.480	.597	.733	

TABLE 74

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SARATOV, SPRING LAT 51 34 N LONG 046 02 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.06	-3.01	-3.77	-3.73	-3.40	-2.58	-0.78
			SNS	8.26	14.44	15.27	18.40	23.04	24.00	20.38
OBSN	LEVEL	MEW	SEW							
424	SFC	-0.04	6.68		.550	.409	.338	.198	.160	.256
416	850	-2.70	13.91	.448		.828	.706	.537	.456	.470
424	700	-4.53	14.94	.416	.830		.825	.687	.613	.626
424	500	-7.91	18.54	.391	.715	.833		.831	.779	.687
424	300	-12.30	23.16	.263	.615	.702	.837		.848	.721
107	200	-17.70	23.08	.287	.479	.543	.654	.771		.795
58	100	-12.14	20.54	.129	.245	.384	.463	.715	.834	

TABLE 75

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SARATOV, SUMMER LAT 51 34 N LONG 046 02 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.85	0.25	-0.14	-0.10	-0.56	-2.70	-3.34
			SNS	9.73	11.83	13.74	16.11	21.72	21.02	12.84
OBSN	LEVEL	MEW	SEW							
413	SFC	-0.70	4.97		.227	.190	.143	.108	.240	.083
398	850	-2.97	11.56	.383		.770	.697	.554	.285	.247
413	700	-6.88	12.57	.355	.800		.828	.699	.527	.420
413	500	-10.61	15.76	.340	.724	.809		.832	.726	.571
413	300	-14.83	21.41	.233	.583	.672	.806		.725	.529
122	200	-28.19	24.52	.276	.552	.718	.761	.845		.723
67	100	-18.50	17.41	.225	.490	.677	.670	.728	.786	

TABLE 76

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

SARATOV, FALL LAT 51 34 N LONG 046 02 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.27	0.31	1.24	0.99	2.23	2.76	3.83
			SNS	7.27	14.26	13.80	18.52	23.01	23.53	21.61
OBSN	LEVEL	MEW	SEW							
395	SFC	-2.20	6.68		.570	.484	.422	.378	.152	.107
367	850	-8.41	13.52	.550		.842	.678	.619	.511	.227
395	700	-11.95	14.13	.469	.834		.819	.727	.711	.625
395	500	-18.36	18.21	.384	.659	.829		.820	.817	.628
395	300	-23.41	22.81	.300	.495	.646	.837		.819	.608
146	200	-31.42	23.84	.218	.313	.475	.705	.804		.723
67	100	-26.64	18.03	.160	.067	.353	.530	.713	.758	

TABLE 77

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KHARKOV, WINTER LAT 49 56 N LONG 036 17 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.43	-0.60	0.45	1.52	2.80	5.60	-1.71
			SNS	7.52	14.16	16.19	20.79	25.96	28.31	25.03
OBSN	LEVEL	MEW	SEW							
377	SFC	0.76	8.06		.535	.377	.250	.122	.184	.202
358	850	-8.08	16.81	.709		.772	.574	.404	.483	.363
377	700	-12.75	18.67	.584	.859		.741	.610	.670	.613
377	500	-19.82	23.51	.398	.643	.809		.761	.763	.636
377	300	-25.18	27.42	.326	.490	.650	.817		.859	.687
195	200	-27.10	24.27	.277	.442	.572	.702	.827		.753
68	100	-37.46	22.87	.273	.371	.399	.536	.657	.720	

TABLE 78

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KHARKOV, SPRING LAT 49 56 N LONG 036 17 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.43	-2.14	-2.64	-3.61	-3.32	-1.65	2.29
			SNS	7.54	13.15	15.68	20.89	27.61	25.06	22.52
OBSN	OEVEL	MEW	SEW							
422	SFC	1.03	6.90		.580	.433	.280	.182	.150	-.052
409	850	-3.11	14.73	.546		.812	.623	.473	.558	.338
422	700	-6.00	16.48	.466	.822		.809	.671	.737	.653
422	500	-10.86	22.62	.354	.627	.775		.838	.786	.715
422	300	-16.65	28.35	.215	.488	.658	.808		.788	.694
140	200	-14.18	22.42	.192	.485	.658	.639	.781		.747
25	100	-6.53	19.06	.278	.767	.657	.435	.290	.510	

TABLE 79

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KHARKOV, SUMMER LAT 49 56 N LONG 036 17 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	1.53	0.56	-0.16	-0.56	-1.11	-0.97	-1.50
			SNS	5.40	10.10	12.05	15.35	21.80	26.17	20.40
OBSN	LEVEL	MEW	SEW							
417	SFC	0.04	4.55		.344	.229	.172	.062	.052	-.223
402	850	-2.90	11.89	.486		.740	.647	.484	.531	.232
417	700	-6.02	13.66	.443	.873		.794	.592	.639	.404
417	500	-10.94	17.95	.417	.790	.838		.739	.673	.433
417	300	-16.83	23.35	.317	.641	.704	.813		.806	.559
153	200	-31.73	22.56	.122	.532	.575	.628	.692		.464
36	100	-20.63	18.56	-.221	.152	.308	.382	.398	.347	

TABLE 80

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

KHARKOV, FALL LAT 49 56 N LONG 036 17 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.02	1.22	1.98	3.34	5.91	8.61	10.78
			SNS	6.65	12.90	15.16	21.49	27.95	30.35	25.34
OBSN	LEVEL	MEW	SEW							
412	SFC	-0.17	6.35		.479	.398	.314	.232	.316	.344
393	850	-7.64	13.46	.640		.815	.662	.511	.660	.558
412	700	-12.59	15.19	.541	.831		.831	.715	.774	.575
412	500	-20.30	20.23	.397	.640	.815		.862	.837	.559
412	300	-25.80	26.11	.297	.483	.674	.813		.864	.575
173	200	-34.47	23.53	.222	.293	.536	.682	.824		.779
61	100	-30.33	25.32	.076	.134	.199	.244	.293	.374	

TABLE 81

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

VOROPONOVO, WINTER LAT 48 41 N LONG 044 21 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0•02	-2•35	-1•85	3•01	9•09	4•64	2•76
			SNS	9•11	12•28	15•14	22•99	30•43	27•16	21•08
OBSN	LEVEL	MEW	SEW							
123	SFC	-0•52	11•04		•583	•365	•222	•132	•130	•058
114	850	-9•72	17•80	•686		•673	•509	•410	•390	•405
123	700	-14•46	19•37	•545	•832		•661	•547	•522	•314
123	500	-22•50	21•35	•397	•529	•711		•808	•726	•598
123	300	-26•31	30•66	•302	•428	•621	•758		•805	•536
106	200	-29•86	25•10	•295	•435	•532	•681	•672		•726
47	100	-36•45	21•76	•185	•444	•301	•250	•308	•514	

TABLE 82

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

VOROPONOVO, SPRING LAT 48 41 N LONG 044 21 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-1.55	-3.73	-4.29	-5.56	-5.36	-6.66	-3.28
		SNS	7.95	13.15	15.04	19.22	25.40	21.45	17.02

OBSN	LEVEL	MEW	SEW							
144	SFC	0.80	8.57		.437	.374	.229	.105	.004	-.015
136	850	-1.83	14.55	.578		.770	.620	.418	.328	-.045
144	700	-4.27	17.35	.439	.804		.754	.584	.524	.440
144	500	-9.89	21.61	.365	.677	.823		.721	.674	.523
144	300	-15.39	25.28	.239	.523	.683	.856		.751	.542
86	200	-14.51	24.66	.296	.559	.606	.721	.769		.616
28	100	-11.87	15.39	.387	.500	.645	.609	.532	.695	

TABLE 83

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

VOROPONOVO, SUMMER LAT 48 41 N LONG 044 21 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0•43	-0•64	-0•60	-0•39	-1•01	-0•60	-1•07
			SNS	6•20	9•70	11•56	15•91	20•98	16•98	11•27
OBSN	LEVEL	MEW	SEW							
206	SFC	0•00	5•93		•500	•261	•201	•076	•026	•355
199	850	-3•34	12•16	•563		•638	•501	•367	•271	•479
208	700	-7•66	15•66	•428	•814		•731	•552	•547	•256
208	500	-12•67	18•69	•388	•711	•789		•745	•622	•393
208	300	-20•34	24•44	•286	•575	•658	•774		•699	•545
118	200	-32•47	20•03	•226	•463	•479	•619	•675		•477
38	100	-20•34	11•76	-•021	•048	•117	•257	•357	•347	

TABLE 84

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

VOROPONOVO, FALL LAT 48 41 N LONG 044 21 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-0.35	-1.32	0.29	3.81	5.19	6.28	8.59
		SNS	8.37	12.32	14.34	22.33	27.94	29.36	22.29
OBSN	LEVEL	MEW	SEW						
141	SFC	-0.23	8.22		.626	.426	.202	.184	.085	.202
134	850	-4.90	13.81	.702		.795	.606	.510	.405	.509
141	700	-10.98	16.65	.547	.806		.757	.659	.585	.723
141	500	-20.85	22.23	.474	.669	.807		.814	.774	.686
141	300	-27.75	29.59	.362	.557	.701	.750		.853	.796
97	200	-35.60	28.25	.325	.555	.630	.695	.748		.817
44	100	-24.31	26.85	.204	.200	.478	.500	.471	.613	

TABLE 85

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ROSTOV NA DONU, WINTER LAT 47 15 N LONG 039 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.95	-0.54	-1.19	1.03	2.49	4.92	2.58
			SNS	8.10	12.69	14.28	21.02	30.84	23.94	21.45
OBSN	LEVEL	MEW	SEW							
139	SFC	0.41	9.05		.316	.189	.211	.078	.081	-.070
130	850	-8.74	15.95	.463		.767	.562	.397	.467	.436
139	700	-14.36	16.28	.437	.787		.690	.526	.562	.400
139	500	-18.89	20.05	.373	.617	.790		.814	.770	.603
139	300	-24.91	26.97	.144	.530	.650	.785		.813	.645
132	200	-24.35	23.35	.186	.447	.585	.719	.814		.783
81	100	-24.40	23.88	-.125	.197	.283	.460	.574	.724	

TABLE 86

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ROSTOV NA DONU, SPRING LAT 47 15 N LONG 039 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	1.65	-2.99	-2.64	-2.97	-3.09	-6.41	-6.30
			SNS	6.00	11.00	12.65	18.07	23.55	22.40	24.23
OBSN	LEVEL	MEW	SEW							
135	SFC	1.30	9.17		.170	.140	.093	.065	.136	-.019
130	850	-0.68	16.71	.625		.694	.511	.413	.445	.346
135	700	-4.37	18.28	.584	.820		.797	.675	.689	.589
135	500	-7.79	21.70	.431	.670	.839		.869	.775	.680
135	300	-12.01	26.13	.379	.491	.728	.794		.795	.636
95	200	-14.84	25.86	.427	.476	.647	.716	.816		.772
66	100	-12.61	21.61	.444	.617	.677	.708	.731	.784	

TABLE 87

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ROSTOV NA DONU, SUMMER LAT 47 15 N LONG 039 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	1.90	-0.78	-1.11	-0.31	-0.62	-1.87	-2.90
			SNS	5.05	8.92	9.73	14.46	20.67	19.49	18.65
OBSN	LEVEL	MEW	SEW							
250	SFC	0.51	6.02		.225	.222	.103	.049	.009	-.124
235	850	-1.46	13.66	.635		.654	.526	.480	.420	.094
250	700	-5.58	13.81	.523	.779		.724	.673	.469	.259
250	500	-11.76	15.49	.367	.657	.750		.779	.538	.291
250	300	-21.26	20.56	.338	.469	.586	.742		.676	.427
128	200	-31.83	18.30	.266	.292	.493	.556	.727		.637
80	100	-21.80	17.47	-.077	-.069	.075	.379	.371	.516	

TABLE 88

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

ROSTOV NA DONU, FALL LAT 47 15 N LONG 039 49 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	1.44	0.45	0.82	3.69	3.30	3.73	4.78
			SNS	5.79	10.73	12.94	18.30	26.19	25.12	18.87
OBSN	LEVEL	MEW	SEW							
140	SFC	2.06	7.50		.229	.121	.001	.011	.032	-.051
129	850	-4.26	13.35	.651		.728	.517	.470	.536	.491
140	700	-10.65	15.35	.517	.802		.745	.701	.743	.547
140	500	-18.05	18.58	.449	.688	.754		.832	.783	.656
140	300	-24.11	25.51	.382	.577	.676	.808		.829	.706
98	200	-29.20	24.17	.227	.354	.583	.706	.769		.703
63	100	-24.83	21.35	.442	.583	.699	.717	.659	.654	

TABLE 89

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TBILISI, WINTER LAT 41 41 N LONG 044 57 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	1.17	2.68	0.66	0.66	-1.30	2.04	-1.69
		SNS	5.05	8.28	10.38	14.18	22.07	24.73	16.55

OBSN	LEVEL	MEW	SEW							
202	SFC	0.04	5.63		.343	.157	.065	.015	.022	-.145
162	850	-8.78	11.85	.375		.505	.191	.195	.171	.160
202	700	-15.82	13.37	.206	.435		.540	.438	.446	.385
202	500	-23.70	17.29	-.028	.039	.582		.479	.677	.735
202	300	-33.42	26.00	.016	.030	.490	.392		.861	.665
143	200	-36.55	23.82	.017	.060	.399	.601	.732		.712
45	100	-40.20	17.68	-.206	.384	.121	.312	.369	.420	

TABLE 90

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TBILISI, SPRING

LAT 41 41 N LONG 044 57 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.00	-0.78	-3.32	-4.12	-7.48	-7.36	-10.03
			SNS	4.82	9.02	9.33	13.78	20.23	19.92	16.69
OBSN	LEVEL	MEW	SEW							
190	SFC	1.13	10.08		-.063	-.027	-.184	-.128	-.004	-.234
175	850	-2.43	10.92	.050		.312	.054	.040	.040	-.046
189	700	-7.42	13.91	.173	.521		.545	.427	.509	.314
190	500	-14.57	18.26	.152	.352	.756		.726	.716	.690
190	300	-22.01	23.10	.010	.216	.550	.749		.817	.819
84	200	-20.32	25.05	.090	.406	.678	.717	.763		.763
32	100	-15.97	19.55	.141	.715	.708	.626	.577	.629	

TABLE 91

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TBILISI, SUMMER LAT 41 41 N LONG 044 57 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	1.69	0.66	-4.20	-5.01	-6.22	-4.12	0.37
			SNS	5.32	8.41	7.85	14.22	19.74	18.77	13.02
OBSN	LEVEL	MEW	SEW							
176	SFC	-0.27	4.49		.243	.048	-.082	-.047	-.041	-.341
167	850	0.43	10.98	.258		.270	-.145	-.129	-.316	-.175
176	700	-2.70	9.60	.150	.443		.369	.385	.092	-.066
176	500	-14.71	12.36	.053	.229	.381		.628	.545	.093
176	300	-33.58	21.31	.038	.177	.282	.437		.678	.143
112	200	-46.59	21.10	-.073	.113	.203	.541	.669		.386
40	100	-39.56	22.97	-.051	-.036	.166	.228	.579	.660	

TABLE 92

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

TBILISI, FALL LAT 41 41 N LONG 044 57 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.56	1.19	-1.75	-1.94	-3.05	-2.23	1.61
			SNS	4.90	8.43	7.91	11.97	19.74	18.89	15.16
OBSN	LEVEL	MEW	SEW							
200	SFC	0.31	5.13		.369	.100	.084	.019	.021	-.111
174	850	-3.67	11.46	.369		.381	.130	-.090	-.166	.190
200	700	-12.14	12.10	.253	.664		.482	.173	.323	.154
200	500	-21.37	15.89	.152	.439	.661		.574	.613	.314
200	300	-32.43	21.65	.051	.348	.500	.628		.730	.340
137	200	-41.91	23.90	.142	.281	.389	.548	.698		.441
54	100	-35.52	23.59	-.151	-.020	.142	.303	.533	.449	

TABLE 93

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

YEREVAN, WINTER LAT 40 08 N LONG 044 28 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.35	-2.88	-3.71	-1.52	-1.05	0.39	-1.20
			SNS	3.67	4.84	9.38	15.08	23.04	21.30	15.43
OBSN	LEVEL	MEW	SEW							
296	SFC	-0.74	4.88		.018	.062	-.020	-.098	-.049	-.044
252	850	-0.02	5.87	.095		.295	.237	.103	.136	.041
296	700	-11.19	10.84	.059	.162		.539	.408	.362	.143
296	500	-20.95	17.06	.091	.108	.564		.621	.657	.282
296	300	-27.34	25.24	.104	.160	.495	.678		.676	.522
169	200	-35.77	21.74	.084	-.026	.411	.698	.663		.648
87	100	-35.19	20.13	.098	-.062	.322	.455	.474	.477	

TABLE 94

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

YEREVAN, SPRING LAT 40 08 N LONG 044 28 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.23	-3.34	-5.28	-6.70	-10.38	-11.66	-9.68
			SNS	5.23	6.28	8.01	13.21	21.08	19.20	15.39
OBSN	LEVEL	MEW	SEW							
329	SFC	0.35	4.62		.115	.005	-.116	-.131	-.059	.052
305	850	1.01	6.82	.064		.327	.142	.005	-.047	-.209
329	700	-6.08	10.55	.064	.234		.491	.359	.343	.083
329	500	-15.70	16.03	.035	.163	.683		.665	.633	.480
329	300	-25.06	22.52	.022	.169	.489	.731		.733	.576
111	200	-28.15	25.57	.061	.225	.558	.708	.818		.644
36	100	-19.37	16.34	.308	.381	.535	.640	.652	.750	

TABLE 95

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

YEREVAN, SUMMER LAT 40 08 N LONG 044 28 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.72	-2.20	-4.60	-5.85	-9.11	-8.88	-8.37
			SNS	4.92	4.60	5.91	13.33	18.91	20.52	17.55
OBSN	LEVEL	MEW	SEW							
382	SFC	0.52	4.55		-.023	-.008	-.087	-.093	-.134	.263
359	850	2.39	5.44	.036		.128	-.058	-.171	-.125	-.148
382	700	-1.22	7.38	.078	.162		.489	.404	.310	.414
382	500	-13.89	11.41	.048	.130	.449		.709	.587	.256
382	300	-34.57	20.69	.035	-.031	.261	.493		.734	.289
140	200	-45.58	20.91	-.077	.000	.050	.358	.600		.456
59	100	-32.04	19.55	-.140	.166	.054	.147	.164	.438	

TABLE 96

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

YEREVAN, FALL LAT 40 08 N LONG 044 28 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	-0.08	-3.21	-4.37	-4.02	-5.38	-6.04	-2.45
			SNS	4.16	5.71	7.83	12.77	19.08	20.63	15.95
OBSN	LEVEL	MEW	SEW							
339	SFC	0.04	4.20		.001	-.006	.022	.066	.035	.064
305	850	0.84	6.35	.046		.259	.107	.121	.102	.110
339	700	-7.66	9.29	.176	.216		.385	.405	.354	.267
339	500	-18.58	13.72	.100	.218	.567		.657	.493	.209
339	300	-29.92	20.38	.111	.092	.363	.611		.587	.317
142	200	-37.50	24.38	.115	.352	.326	.477	.544		.549
65	100	-29.42	17.62	.044	-.105	.249	.189	.204	.312	

TABLE 97

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

BAKU, WINTER LAT 41 00 N LONG 049 00 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-0.52	-1.53	-2.90	-1.13	0.16	4.06	0.64
		SNS	4.53	13.19	12.73	15.82	24.19	22.69	20.48

OBSN	LEVEL	MEW	SEW							
180	SFC	-0.29	4.43		.156	.030	.050	.012	-.095	.155
158	850	-8.55	11.50	.071		.487	.225	-.003	-.031	.481
181	700	-11.95	11.19	.118	.537		.645	.471	.339	.472
181	500	-19.31	16.81	.177	.227	.527		.636	.438	.482
181	300	-28.33	24.31	.147	.227	.480	.772		.716	.465
139	200	-34.80	22.52	.039	.081	.350	.565	.701		.740
21	100	-38.24	12.94	.324	.052	.019	-.058	.398	.374	

TABLE 98

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

BAKU, SPRING LAT 41 00 N LONG 049 00 E

	NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST		MNS	-0.45	-1.57	-3.32	-6.65	-5.77	-5.25	-4.84
		SNS	5.46	12.03	10.20	15.43	21.41	21.49	18.89
OBSN	LEVEL	MEW	SEW						
191	SFC	0.14	4.68		.255	.150	.051	.020	-.011	.241
178	850	-4.33	10.63	-.004		.401	-.016	-.150	-.065	-.047
191	700	-6.86	12.36	.025	.605		.345	.233	.304	.089
191	500	-11.62	17.02	-.007	.559	.636		.626	.489	.269
191	300	-21.12	19.88	-.006	.381	.452	.669		.706	.615
81	200	-27.38	24.56	-.131	.379	.334	.611	.689		.740
28	100	-18.34	20.79	.281	.508	.274	.337	.503	.655	

TABLE 99

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS), BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

BAKU, SUMMER LAT 41 00 N LONG 049 00 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0.29	1.24	-2.78	-2.95	-3.63	-1.85	6.43
			SNS	4.27	12.36	10.10	13.80	24.05	19.12	21.39
OBSN	LEVEL	MEW	SEW							
172	SFC	0.99	4.53		.065	-.035	-.096	-.039	-.217	-.119
156	850	1.57	7.75	.123		.364	-.093	-.378	-.405	.463
172	700	-4.97	8.92	.054	.434		.379	.186	.120	.287
172	500	-15.21	12.49	.070	.196	.500		.532	.417	.039
172	300	-34.08	22.62	.092	.117	.315	.546		.622	.125
101	200	-41.99	24.71	-.012	.188	.307	.491	.711		-.284
21	100	-32.53	30.33	-.090	.238	.326	.370	.492	.840	

TABLE 100

WIND COMPONENT MEANS AND STANDARD DEVIATIONS (IN KNOTS),
BY LEVELS (IN MILLIBARS), WITH CORRELATIONS BETWEEN LEVELS FOR EACH COMPONENT

BAKU, FALL LAT 41 00 N LONG 049 00 E

		NORTH SOUTH	LEVEL	SFC	850	700	500	300	200	100
EAST-WEST			MNS	0•10	-0•70	-1•01	1•11	1•38	-1•15	0•33
			SNS	4•14	12•55	10•34	13•25	20•89	22•71	32•60
OBSN	LEVEL	MEW	SEW							
166	SFC	-0•10	4•31		•170	-•008	-•111	-•200	-•248	-•312
153	850	-6•98	10•43	•152		•276	•129	-•033	-•110	-•307
166	700	-10•90	10•96	•039	•379		•460	•249	•112	-•435
166	500	-18•34	16•38	•003	•099	•534		•498	•367	•283
166	300	-28•80	22•44	-•057	•167	•505	•666		•597	•618
115	200	-41•02	23•94	-•003	•125	•325	•486	•569		•763
25	100	-46•09	35•03	-•010	-•056	•233	•507	•630	•801	

TABULATIONS OF DENSITY DATA

APPENDIX B

TABLE 101

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MURMANSK, WINTER LAT 68 58 N LONG 033 03 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3171	1.1054	.9253	.6864	.5679	.4415	.2940	.2175	
	SX10	.5220	.2184	.1753	.1992	.1581	.1529	.0677	.0415	
OBSN	HGT									
349	46	1	1.000	.578	.366	.151	.066	-.058	-.231	-.228
349	1458	2		1.000	.768	.372	.334	.373	-.244	-.347
345	3014	3			1.000	.540	.382	.416	-.308	-.283
229	5579	4				1.000	.631	-.226	-.273	-.232
228	7193	5					1.000	.315	-.117	-.113
22	9177	6						1.000	.790	.740
11	11806	7							1.000	.926
11	13638	8								1.000
0	16221	9								

TABLE 102

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MURMANSK, SPRING LAT 68 58 N LONG 033 03 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2937	1.0982	.9212	.6859	.5698	.4463	.2935	.2210	.1544
		SX10	.4154	.2190	.1729	.1681	.1689	.1802	.1387	.0878	.0436
OBSN	HGT										
393	46	1	1.000	.659	.483	.121	.117	.181	.084	-.109	.566
393	1458	2		1.000	.764	.274	.160	.066	.070	-.161	-.079
390	3014	3			1.000	.455	.268	.070	.016	-.178	-.216
273	5579	4				1.000	.603	-.052	.210	.044	-.065
271	7193	5					1.000	.489	.523	.453	.514
51	9177	6						1.000	.798	.783	.705
28	11806	7							1.000	.962	.869
27	13638	8								1.000	.932
5	16221	9									1.000

TABLE 103

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MURMANSK, SUMMER LAT 68 58 N LONG 033 03 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2427	1.0622	.8974	.6767	.5689	.4523			
	SX10	.2286	.1844	.1218	.1088	.1741	.1075			
OBSN	HGT									
297	46	1 1.000	.785	.634	.271	.241	.477			
297	1458	2	1.000	.698	.279	.241	.317			
294	3014	3		1.000	.401	.296	.633			
224	5579	4			1.000	.418	.305			
167	7193	5				1.000	.758			
92	9177	6					1.000			
0	11806	7								
0	13638	8								
0	16221	9								

TABLE 104

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MURMANSK, FALL LAT 68 58 N LONG 033 03 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2785	1.0851	.9116	.6842	.5680	.4542			
	SX10	.3615	.2242	.1740	.1177	.1196	.0788			
OBSN	HGT									
281	46	1 1.000	.822	.722	.516	.239	.178			
280	1458	2	1.000	.834	.571	.232	.173			
279	3014	3		1.000	.607	.278	.029			
180	5579	4			1.000	.563	.221			
172	7193	5				1.000	.688			
25	9177	6					1.000			
0	11806	7								
0	13638	8								
0	16221	9								

TABLE 105

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KEM PORT, WINTER LAT 64 59 N LONG 034 47 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3299	1.1089	.9284	.6939	.5727	.4423	.2941	.2175	
	SX10	.5790	.2751	.2003	.1290	.1280	.1659	.1412	.0778	
OBSN	HGT									
310	10 1	1.000	.521	.356	.270	.196	.101	.334	.319	
310	1458 2		1.000	.620	.329	.215	-.166	.043	.121	
307	3014 3			1.000	.663	.422	.266	-.009	.041	
252	5579 4				1.000	.729	.439	-.050	.004	
244	7193 5					1.000	.635	.377	.341	
59	9177 6						1.000	.922	.919	
20	11806 7							1.000	.972	
19	13638 8								1.000	
0	16221 9									

TABLE 106

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KEM PORT, SPRING LAT 64 59 N LONG 034 47 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3106	1.1015	.9241	.6933	.5754	.4510	.3019	.2261	.1543
	SX10	.5212	.2617	.1948	.1425	.1313	.1530	.1628	.1134	.0597
OBSN	HGT									
298	10	1.000	.744	.532	.387	.043	-.279	-.214	-.288	.326
298	1458	2	1.000	.762	.482	.126	-.370	-.425	-.460	.067
294	3014	3		1.000	.499	.077	-.465	-.470	-.465	.166
225	5579	4			1.000	.288	-.168	-.230	-.241	.114
219	7193	5				1.000	.593	.471	.506	.444
70	9177	6					1.000	.903	.895	.843
37	11806	7						1.000	.980	.861
35	13638	8							1.000	.940
15	16221	9								1.000

TABLE 107

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KEM PORT, SUMMER LAT 64 59 N LONG 034 47 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2397	1.0524	.8959	.6808	.5684	.4541	.3032	.2287	.1591
	SX10	.2497	.2277	.1670	.1825	.1098	.0896	.1924	.1312	.0435
OBSN	HGT									
167	10	1 1.000	.749	.535	.258	.346	.511	.262	.380	.249
164	1458	2	1.000	.609	.217	.187	.233	.044	.120	-.352
161	3014	3		1.000	.383	.310	.142	.066	.158	-.425
138	5579	4			1.000	.426	-.138	-.331	-.355	-.664
126	7193	5				1.000	.578	.033	.144	-.595
93	9177	6					1.000	.657	.792	-.484
13	11806	7						1.000	.933	-.002
12	13638	8							1.000	.255
8	16221	9								1.000

TABLE 108

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KEM PORT, FALL LAT 64 59 N LONG 034 47 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2857	1.0879	.9151	.6873	.5733	.4546	.3089	.2309	.1574
	SX10	.4157	.2749	.2063	.1677	.1968	.1165	.1534	.1101	.0601
OBSN	HGT									
290	10	1.000	.647	.575	.365	.242	.109	.082	.018	.280
289	1458		1.000	.733	.412	.346	-.018	-.243	-.215	.535
285	3014			1.000	.557	.376	-.049	-.165	-.177	.060
252	5579				1.000	.308	-.039	.090	-.045	-.582
239	7193					1.000	.591	.306	.282	.188
77	9177						1.000	.759	.779	.537
22	11806							1.000	.980	.889
20	13638								1.000	.956
7	16221									1.000

TABLE 109

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ARKHANGELSK, WINTER LAT 64 35 N LONG 040 30 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3488	1.1189	.9321	.6965	.5791	.4392	.2940	.2183	
	SX10	.5911	.2371	.1648	.1252	.2112	.1225	.1158	.0754	
OBSN	HGT									
377	13	1 1.000	.593	.509	.296	.147	.050	.081	.081	
369	1458	2	1.000	.744	.416	.206	.136	-.003	-.012	
345	3014	3		1.000	.645	.249	.116	-.076	-.105	
282	5579	4			1.000	.462	.253	.096	.088	
270	7193	5				1.000	.620	.424	.381	
53	9177	6					1.000	.906	.896	
35	11806	7						1.000	.974	
35	13638	8							1.000	
0	16221	9								

TABLE 110

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ARKHANGELSK, SPRING LAT 64 35 N LONG 040 30 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3131	1.1037	.9260	.6942	.5753	.4476	.3002	.2244	.1541
	SX10	.5708	.2607	.1710	.1510	.1273	.1845	.1641	.1073	.0555
OBSN	HGT									
336	13	1.000	.601	.370	.074	-.013	-.047	-.404	-.486	-.727
332	1458	2	1.000	.796	.274	.023	-.228	-.568	-.610	-.606
297	3014	3		1.000	.405	.125	-.136	-.603	-.601	-.494
255	5579	4			1.000	.420	.023	-.154	-.137	-.209
248	7193	5				1.000	.696	.475	.443	.255
68	9177	6					1.000	.872	.830	.738
45	11806	7						1.000	.984	.871
42	13638	8							1.000	.933
16	16221	9								1.000

TABLE 111

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ARKHANGELSK, SUMMER LAT 64 35 N LONG 040 30 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2453	1.0565	.8966	.6807	.5722	.4568	.3172	.2380	.1583
	SX10	.2210	.1693	.1092	.1203	.1915	.0565	.1088	.0662	.0238
OBSN	HGT									
193	13	1 1.000	.712	.615	.319	.119	.036	-.278	-.176	.083
190	1458	2	1.000	.784	.338	.135	.003	-.564	-.509	-.110
166	3014	3		1.000	.421	.150	.149	-.521	-.470	-.238
144	5579	4			1.000	.112	.263	-.389	-.369	-.142
138	7193	5				1.000	.492	-.141	-.237	-.129
104	9177	6					1.000	.257	.136	.179
10	11806	7						1.000	.985	.632
9	13638	8							1.000	.736
9	16221	9								1.000

TABLE 112

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ARKHANGELSK, FALL LAT 64 35 N LONG 040 30 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2906	1.0923	.9175	.6899	.5740	.4503	.3015	.2244	.1482
	SX10	.4656	.2835	.2050	.1531	.1388	.1535	.1731	.1138	.0748
OBSN	HGT									
310	13	1 1.000	.765	.585	.412	.258	.034	-.208	-.314	-.282
306	1458	2	1.000	.737	.520	.193	-.149	-.250	-.248	.051
288	3014	3		1.000	.631	.170	-.280	-.460	-.495	-.318
246	5579	4			1.000	.287	-.286	-.327	-.356	-.211
231	7193	5				1.000	.472	.518	.573	.358
65	9177	6					1.000	.924	.913	.808
31	11806	7						1.000	.971	.745
29	13638	8							1.000	.940
9	16221	9								1.000

TABLE 113

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SORTOVOLA, WINTER LAT 61 43 N LONG 030 43 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3227	1.1134	.9292	.6938	.5737	.4421	.2966	.2212	.1571
	SX10	.7567	.2985	.1895	.1361	.1318	.1419	.1250	.0848	.1137
OBSN	HGT									
265	18	1.000	.419	.314	.327	.104	.107	-.094	-.089	.849
265	1458		1.000	.712	.457	.181	.005	-.215	-.154	.998
261	3014			1.000	.751	.422	.165	-.144	-.064	-.007
173	5579				1.000	.721	.347	.075	.135	.104
169	7193					1.000	.610	.267	.331	-.157
144	9177						1.000	.842	.857	.907
114	11806							1.000	.948	-.464
112	13638								1.000	.376
3	16221									1.000

TABLE 114

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SORTOVOLA, SPRING LAT 61 43 N LONG 030 43 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2999	1.0942	.9217	.6925	.5777	.4503	.3047	.2282	.1553
		SX10	.4678	.2597	.1859	.1176	.1852	.1385	.1347	.0870	.0529
OBSN	HGT										
335	18	1	1.000	.678	.560	.395	.132	.104	-.067	-.138	-.230
335	1458	2		1.000	.605	.406	.060	-.001	-.212	-.250	-.234
330	3014	3			1.000	.536	.063	-.072	-.251	-.280	-.271
230	5579	4				1.000	.296	.172	-.117	-.129	-.204
222	7193	5					1.000	.184	-.110	-.168	-.098
195	9177	6						1.000	.589	.527	.124
171	11806	7							1.000	.952	.515
168	13638	8								1.000	.770
51	16221	9									1.000

TABLE 115

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SORTOVOLA, SUMMER L T 61 3 N ONG 0 0 43

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2359	1.0549	.8968	.6804	.5708	.4570	.3172	.2387	.1594
	SX10	.3002	.1578	.1315	.1222	.0839	.1412	.1187	.0772	.0408
OBSN	HGT									
298	18	1 1.000	.336	.328	.142	.223	.144	.093	.092	-.027
297	1458	2	1.000	.554	.133	.110	.034	-.135	-.172	-.103
296	3014	3		1.000	.322	.296	.135	-.068	-.053	-.108
249	5579	4			1.000	.256	.087	-.032	-.068	-.144
180	7193	5				1.000	.376	.225	.292	.262
176	9177	6					1.000	.207	.195	.160
154	11806	7						1.000	.946	.631
152	13638	8							1.000	.798
142	16221	9								1.000

TABLE 116

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SORTOVOLA, FALL LAT 61 43 N LONG 030 43 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2728	1.0857	.9128	.6873	.5732	.4516	.3104	.2321	.1579
		SX10	.3927	.2558	.2104	.1320	.1347	.1524	.1425	.0879	.0500
OBSN	HGT										
270	18	1	1.000	.533	.336	.165	.162	.100	.110	.069	.253
270	1458	2		1.000	.514	.310	.233	-.038	-.031	-.067	.144
264	3014	3			1.000	.247	.127	-.097	-.142	-.166	.000
218	5579	4				1.000	.347	.009	.008	-.003	-.018
203	7193	5					1.000	.377	.096	.063	-.017
186	9177	6						1.000	.442	.431	-.057
157	11806	7							1.000	.958	.182
151	13638	8								1.000	.504
39	16221	9									1.000

TABLE 117

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TALLIN, WINTER LAT 59 25 N LONG 024 48 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3057	1.1069	.9269	.6971	.5754	.4470	.3026	.2255	.1554
	SX10	.5744	.2731	.2095	.1640	.1109	.1390	.1521	.0954	.0707
OBSN	HGT									
560	44	1.000	.585	.344	.267	.276	.177	-.056	-.071	-.382
560	1458	2	1.000	.760	.454	.371	.195	-.095	-.082	.141
556	3014	3		1.000	.475	.373	.115	-.135	-.092	.363
461	5579	4			1.000	.575	.173	-.115	-.098	.065
444	7193	5				1.000	.727	.364	.407	.332
333	9177	6					1.000	.839	.851	.806
214	11806	7						1.000	.979	.810
206	13638	8							1.000	.919
8	16221	9								1.000

TABLE 118

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TALLIN, SPRING LAT 59 25 N LONG 024 48 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2862	1.0919	.9208	.6941	.5771	.4539	.3092	.2312	.1567
	SX10	.3824	.2271	.1602	.1353	.0872	.1173	.1325	.0848	.0327
OBSN	HGT									
591	44	1	1.000	.714	.542	.302	.195	-.021	-.169	-.262	-.155
590	1458	2		1.000	.846	.418	.242	-.194	-.427	-.478	-.393
587	3014	3			1.000	.480	.261	-.190	-.447	-.472	-.407
490	5579	4				1.000	.532	.033	-.239	-.251	-.312
464	7193	5					1.000	.607	.290	.299	.034
403	9177	6						1.000	.802	.788	.571
326	11806	7							1.000	.974	.791
309	13638	8								1.000	.887
155	16221	9									1.000

TABLE 119

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TALLIN, SUMMER LAT 59 25 N LONG 024 48 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2297	1.0557	.8974	.6827	.5709	.4564	.3189	.2409	.1611
		SX10	.1643	.1288	.1180	.1212	.0765	.0783	.1152	.0834	.0434
OBSN	HGT										
538	44	1	1.000	.702	.500	.314	.363	.220	.042	.002	-.052
538	1458	2		1.000	.644	.362	.305	.045	-.290	-.341	-.280
536	3014	3			1.000	.327	.170	-.041	-.266	-.332	-.354
511	5579	4				1.000	.108	-.069	-.167	-.214	-.276
412	7193	5					1.000	.448	.060	.054	.076
405	9177	6						1.000	.390	.352	.308
359	11806	7							1.000	.971	.717
284	13638	8								1.000	.849
281	16221	9									1.000

TABLE 120

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TALLIN, FALL LAT 59 25 N LONG 024 48 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2625	1.0802	.9104	.6883	.5748	.4551	.3174	.2371	.1597
	SX10	.3465	.2074	.1516	.0956	.1482	.0855	.1360	.0940	.0461
OBSN	HGT									
562	44	1	1.000	.618	.390	.277	.105	.126	.070	.034	.287
560	1458	2		1.000	.794	.597	.133	.032	-.118	-.147	-.051
555	3014	3			1.000	.593	.107	-.087	-.249	-.275	-.331
498	5579	4				1.000	.268	.089	-.151	-.166	-.172
464	7193	5					1.000	.064	.106	.092	.082
421	9177	6						1.000	.686	.652	.551
301	11806	7							1.000	.968	.856
246	13638	8								1.000	.933
145	16221	9									1.000

TABLE 120

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TALLIN, FALL LAT 59 25 N LONG 024 48 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2625	1.0802	.9104	.6883	.5748	.4551	.3174	.2371	.1597
		SX10	.3465	.2074	.1516	.0956	.1482	.0855	.1360	.0940	.0461
OBSN	HGT										
562	44	1	1.000	.618	.390	.277	.105	.126	.070	.034	.287
560	1458	2		1.000	.794	.597	.133	.032	-.118	-.147	-.051
555	3014	3			1.000	.593	.107	-.087	-.249	-.275	-.331
498	5579	4				1.000	.268	.089	-.151	-.166	-.172
464	7193	5					1.000	.064	.106	.092	.082
421	9177	6						1.000	.686	.652	.551
301	11806	7							1.000	.968	.856
246	13638	8								1.000	.933
145	16221	9									1.000

TABLE 121

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LENINGRAD TOWN, WINTER LAT 59 58 N LONG 030 18 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.3098	1.0961	.9175	.6868	.5673	.4405	.2969	.2214	.1501
		SX10	.5345	.2593	.1821	.1125	.1031	.1362	.1339	.0843	.0875
OBSN	HGT										
708	4	1	1.000	.650	.528	.385	.283	.174	.077	.063	.947
707	1458	2		1.000	.793	.532	.322	-.008	-.134	-.135	-.627
696	3014	3			1.000	.713	.407	-.017	-.183	-.164	.860
583	5579	4				1.000	.752	.186	-.051	-.023	.853
578	7193	5					1.000	.554	.297	.303	.916
329	9177	6						1.000	.768	.748	.994
260	11806	7							1.000	.971	.898
260	13638	8								1.000	.974
4	16221	9									1.000

TABLE 122

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LENINGRAD TOWN, SPRING LAT 59 58 N LONG 030 18 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2808	1.0816	.9114	.6855	.5690	.4462	.3000	.2246	.1557
	SX10	.4168	.2325	.1725	.1002	.1007	.1384	.1429	.0912	.0498
OBSN	HGT									
657	4	1.000	.767	.524	.402	.063	-.052	-.159	-.220	-.227
654	1458		1.000	.726	.507	-.007	-.290	-.403	-.436	-.279
645	3014			1.000	.458	-.020	-.338	-.393	-.404	-.410
538	5579				1.000	.525	.030	-.118	-.079	.194
532	7193					1.000	.598	.411	.462	.428
341	9177						1.000	.817	.834	.635
261	11806							1.000	.974	.684
253	13638								1.000	.873
43	16221									1.000

TABLE 123

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LENINGRAD TOWN, SUMMER LAT 59 58 N LONG 030 18 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2221	1.0426	.8876	.6743	.5639	.4507	.3143	.2363	.1582
	SX10	.2364	.1506	.1172	.1434	.1000	.0831	.1148	.0733	.0329
OBSN	HGT									
582	4	1.000	.601	.492	.243	.207	.205	.000	.049	-.007
580	1458	2	1.000	.613	.250	.248	.162	-.138	-.114	-.192
570	3014	3		1.000	.368	.337	.281	-.082	-.005	-.124
505	5579	4			1.000	.135	.026	-.050	-.063	-.121
460	7193	5				1.000	.334	.061	.125	.106
409	9177	6					1.000	.402	.452	.159
284	11806	7						1.000	.954	.524
241	13638	8							1.000	.726
227	16221	9								1.000

TABLE 124

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LENINGRAD TOWN, FALL LAT 59 58 N LONG 030 18 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2686	1.0729	.9023	.6809	.5666	.4487	.3101	.2319	.1574
		SX10	.4013	.2261	.1602	.1084	.1037	.1048	.1432	.0882	.0473
OBSN	HGT										
597	4	1	1.000	.705	.564	.391	.231	.077	-.061	-.109	.015
595	1458	2		1.000	.810	.531	.256	.016	-.243	-.278	-.159
586	3014	3			1.000	.563	.260	-.061	-.346	-.353	-.206
540	5579	4				1.000	.509	.147	-.201	-.186	.035
536	7193	5					1.000	.390	.073	.054	.127
384	9177	6						1.000	.679	.694	.440
281	11806	7							1.000	.966	.639
260	13638	8								1.000	.812
83	16221	9									1.000

TABLE 125

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

RIGA, WINTER LAT 56 58 N LONG 024 04 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.3053	1.0985	.9207	.6928	.5742	.4472	.3032	.2256	.1589
		SX10	.4916	.2480	.1793	.1222	.1032	.1245	.1456	.0881	.0323
OBSN	HGT										
562	3	1	1.000	.659	.504	.284	.210	.127	.089	.064	.889
559	1458	2		1.000	.749	.411	.232	-.075	-.120	-.117	-.479
556	3014	3			1.000	.473	.187	-.176	-.194	-.211	-.490
463	5579	4				1.000	.376	-.018	-.053	-.059	.825
459	7193	5					1.000	.455	.257	.278	.619
421	9177	6						1.000	.771	.849	.848
283	11806	7							1.000	.970	.581
276	13638	8								1.000	.738
4	16221	9									1.000

TABLE 126

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

RIGA, SPRING LAT 56 58 N LONG 024 04 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2811	1.0836	.9151	.6914	.5753	.4511	.3069	.2295	.1571
	SX10	.3717	.2477	.1911	.1367	.1079	.1296	.1342	.0844	.0343
OBSN	HGT									
537	3	1 1.000	.633	.396	.383	.252	.070	-.043	-.113	-.271
536	1458	2	1.000	.716	.340	.165	-.112	-.368	-.387	-.302
517	3014	3		1.000	.368	.173	-.098	-.339	-.345	-.260
465	5579	4			1.000	.662	.106	-.077	-.067	-.058
458	7193	5				1.000	.539	.290	.307	-.114
434	9177	6					1.000	.724	.707	.166
379	11806	7						1.000	.955	.657
356	13638	8							1.000	.841
118	16221	9								1.000

TABLE 127

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

RIGA, SUMMER LAT 56 58 N LONG 024 04 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2292	1.0520	.8945	.6789	.5691	.4547	.3185	.2391	.1595
		SX10	.2867	.1862	.1381	.0877	.0780	.0764	.1162	.0760	.0337
OBSN	HGT										
494	3	1	1.000	.358	.359	.150	.088	-.006	-.123	-.142	-.200
491	1458	2		1.000	.462	.197	.054	-.040	-.330	-.361	-.258
469	3014	3			1.000	.307	.051	-.063	-.251	-.281	-.262
429	5579	4				1.000	.558	.182	-.118	-.123	-.204
417	7193	5					1.000	.505	.085	.125	.028
414	9177	6						1.000	.519	.533	.376
398	11806	7							1.000	.941	.675
316	13638	8								1.000	.824
308	16221	9									1.000

TABLE 128

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

RIGA, FALL LAT 56 58 N LONG 024 04 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2647	1.0741	.9058	.6852	.5741	.4538	.3168	.2360	.1599
	SX10	.3320	.2087	.1593	.0916	.1407	.0935	.1437	.0970	.0436
OBSN	HGT									
490	3	1	1.000	.666	.483	.399	.179	.154	-.034	-.052	-.013
489	1458	2		1.000	.761	.610	.250	.002	-.244	-.266	-.152
473	3014	3			1.000	.647	.111	-.142	-.397	-.382	-.305
422	5579	4				1.000	.374	.012	-.335	-.317	-.104
407	7193	5					1.000	.051	-.083	-.103	.052
403	9177	6						1.000	.702	.712	.595
352	11806	7							1.000	.971	.675
291	13638	8								1.000	.836
129	16221	9									1.000

TABLE 129

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MINSK, WINTER LAT 53 52 N LONG 027 32 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2816	1.1023	0.9218	0.6927	0.5724	0.4512	0.3081	0.2293	0.1548
	SX10	.4654	.2754	.2039	.1124	.0770	.1065	.1296	.0810	.0818
OBSN	HGT									
264	234	1 1.000	.712	.522	.357	.161	-.119	-.172	-.149	.115
264	1458	2	1.000	.760	.518	.242	-.206	-.411	-.387	-.298
262	3014	3		1.000	.570	.212	-.255	-.456	-.446	-.311
261	5579	4			1.000	.661	-.004	-.271	-.275	-.417
261	7193	5				1.000	.707	.193	.129	-.655
238	9177	6					1.000	.654	.564	-.615
222	11806	7						1.000	.946	.571
219	13638	8							1.000	.929
13	16221	9								1.000

TABLE 130

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MINSK, SPRING LAT 53 52 N LONG 027 32 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2473	1.0824	0.9144	0.6916	0.5737	0.4555	0.3113	0.2330	0.1572
	SX10	.4110	.2460	.1795	.1190	.0738	.1032	.1215	.0753	.0355
OBSN	HGT									
296	234	1	1.000	.748	.460	.287	.153	-.061	-.207	-.268	-.209
296	1458	2		1.000	.620	.355	.103	-.196	-.409	-.448	-.333
295	3014	3			1.000	.370	.059	-.173	-.336	-.378	-.446
290	5579	4				1.000	.673	.016	-.140	-.173	-.307
284	7193	5					1.000	.694	.288	.281	.150
261	9177	6						1.000	.635	.652	.558
237	11806	7							1.000	.963	.740
229	13638	8								1.000	.872
111	16221	9									1.000

TABLE 131

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MINSK, SUMMER LAT 53 52 N LONG 027 32 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.1979	1.0483	0.8946	0.6811	0.5687	0.4568	0.3228	0.2438	0.1627
		SX10	.1940	.1715	.1276	.1328	.0796	.0820	.1162	.0833	.0406
OBSN	HGT										
305	234	1	1.000	.735	.542	.448	.615	.491	-.024	-.021	-.098
305	1458	2		1.000	.623	.308	.359	.224	-.316	-.313	-.342
303	3014	3			1.000	.326	.347	.219	-.253	-.228	-.313
301	5579	4				1.000	.796	.160	-.112	-.147	.022
262	7193	5					1.000	.703	.172	.150	.158
260	9177	6						1.000	.460	.469	.320
235	11806	7							1.000	.973	.735
207	13638	8								1.000	.868
204	16221	9									1.000

TABLE 132

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MINSK, FALL LAT 53 52 N LONG 027 32 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2424	1.0779	0.9087	0.6884	0.5731	0.4579	0.3200	0.2387	0.1602
		SX10	.2854	.2173	.1327	.1037	.0653	.0960	.1276	.0806	.0367
OBSN	HGT										
258	234	1	1.000	.730	.579	.403	.335	.065	.064	-.027	.066
258	1458	2		1.000	.657	.369	.270	-.019	-.278	-.361	-.148
257	3014	3			1.000	.518	.285	-.174	-.425	-.452	-.251
252	5579	4				1.000	.667	-.104	-.225	-.289	-.179
247	7193	5					1.000	.659	.088	-.010	.079
245	9177	6						1.000	.508	.444	.349
206	11806	7							1.000	.946	.522
185	13638	8								1.000	.735
100	16221	9									1.000

TABLE 133

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KIROV, WINTER LAT 58 39 N LONG 049 37 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3290	1.1186	.9325	.6953	.5740	.4489	.3024	.2246	.1438
	SX10	.5850	.2677	.1592	.0874	.1008	.1292	.1315	.0790	.0091
OBSN	HGT									
342	164	1 1.000	.684	.533	.228	-.077	.011	.023	-.056	.965
341	1458	2	1.000	.767	.360	-.120	-.127	.216	-.220	.846
337	3014	3		1.000	.571	-.006	-.173	.236	-.237	.985
258	5579	4			1.000	.632	.124	.076	-.052	.979
252	7193	5				1.000	.677	.343	.364	.582
163	9177	6					1.000	.846	.854	.124
153	11806	7						.000	.977	.784
153	13638	8							1.000	.768
3	16221	9								1.000

TABLE 134

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KIROV, SPRING LAT 58 39 N LONG 049 37 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2675	1.0906	.9176	.6901	.5716	.4486	.3040	.2278	.1577
		SX10	.5313	.3013	.2075	.1319	.1022	.1759	.1708	.1158	.0457
OBSN	HGT										
304	164	1	1.000	.702	.464	.318	.036	-.318	-.392	-.439	-.423
303	1458	2		1.000	.741	.351	-.052	-.389	-.541	-.569	-.491
299	3014	3			1.000	.303	-.114	-.398	-.467	-.465	-.304
241	5579	4				1.000	.247	-.094	-.056	-.045	.195
223	7193	5					1.000	.734	.466	.496	.489
167	9177	6						1.000	.708	.716	.743
146	11806	7							1.000	.979	.768
145	13638	8								1.000	.881
57	16221	9									1.000

TABLE 135

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KIROV, SUMMER LAT 58 39 N LONG 049 37 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2034	1.0460	.8915	.6786	.5696	.4557	.3174	.2393	.1601
		SX10	.2602	.1629	.1248	.1395	.0769	.0896	.1216	.0783	.0299
OBSN	HGT										
233	164	1	1.000	.617	.501	.274	.252	.023	-.260	-.274	-.382
232	1458	2		1.000	.793	.457	.491	.166	-.190	-.199	-.524
231	3014	3			1.000	.567	.643	.260	-.100	-.091	-.491
174	5579	4				1.000	.432	-.113	-.199	-.250	-.389
108	7193	5					1.000	.481	.149	.136	-.270
108	9177	6						1.000	.527	.509	.012
91	11806	7							1.000	.968	.606
90	13638	8								1.000	.768
86	16221	9									1.000

TABLE 136

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KIROV, FALL LAT 58 39 N LONG 049 37 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2684	1.0912	.9156	.6895	.5729	.4532	.3099	.2319	.1578
	SX10	.5720	.2965	.2014	.1339	.0969	.1125	.1476	.0942	.0347
OBSN	HGT									
296	164	1	1.000	.713	.556	.421	.378	-.047	-.200	-.256	.248
296	1458	2		1.000	.886	.622	.512	-.065	-.350	-.372	.097
294	3014	3			1.000	.679	.545	-.008	-.338	-.349	.001
227	5579	4				1.000	.680	.049	-.095	-.108	.332
202	7193	5					1.000	.486	.276	.300	.370
155	9177	6						1.000	.805	.794	.182
121	11806	7							1.000	.970	.540
119	13638	8								1.000	.758
37	16221	9									1.000

TABLE 137

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

STRIGINO, WINTER LAT 56 13 N LONG 043 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3122	1.1026	.9214	.6885	.5700	.4449	.3005	.2234	
	SX10	.5775	.2601	.1862	.1072	.1080	.1268	.1398	.0834	
OBSN	HGT									
231	82	1	1.000	.627	.506	.366	.075	.047	-.036	-.083
231	1458	2		1.000	.861	.520	-.001	-.229	-.363	-.371
230	3014	3			1.000	.592	.048	-.312	-.412	-.421
227	5579	4				1.000	.443	.069	-.084	-.073
227	7193	5					1.000	.573	.292	.339
165	9177	6						1.000	.816	.844
163	11806	7							1.000	.961
163	13638	8								1.000
0	16221	9								

TABLE 138

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

STRIGINO, SPRING LAT 56 13 N LONG 043 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2655	1.0812	.9085	.6849	.5691	.4448	.3035	.2265	.1562
	SX10	.4678	.3000	.2124	.1106	.0950	.1599	.1741	.1106	.0349
OBSN	HGT									
178	82	1 1.000	.768	.545	.414	.119	-.216	-.364	-.400	-.174
178	1458	2	1.000	.633	.383	.066	-.315	-.493	-.514	-.456
178	3014	3		1.000	.500	.098	-.250	-.341	-.359	-.218
178	5579	4			1.000	.636	.042	-.054	-.046	.112
178	7193	5				1.000	.699	.447	.468	.246
152	9177	6					1.000	.727	.722	.599
152	11806	7						1.000	.979	.678
151	13638	8							1.000	.823
38	16221	9								1.000

TABLE 139

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

STRIGINO, SUMMER LAT 56 13 N LONG 043 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1944	1.0338	.8858	.6733	.5659	.4545	.3180	.2392	.1592
	SX10	.1090	.1059	.1340	.0577	.0507	.0839	.1182	.0715	.0308
OBSN	HGT									
94	82	1 1.000	.816	.146	.321	.159	-.184	-.229	-.291	-.372
94	1458	2	1.000	.160	.240	.075	-.217	-.393	-.412	-.388
93	3014	3		1.000	.054	.024	-.103	-.039	-.140	-.228
93	5579	4			1.000	.846	.376	.098	.121	.006
93	7193	5				1.000	.553	.222	.232	.077
91	9177	6					1.000	.272	.289	.226
89	11806	7						1.000	.970	.651
88	13638	8							1.000	.789
86	16221	9								1.000

TABLE 140

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

STRIGINO, FALL LAT 56 13 N LONG 043 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2713	1.0825	.9070	.6842	.5708	.4494	.3100	.2317	.1571
	SX10	.4633	.2951	.1560	.0963	.1115	.1040	.1381	.0845	.0245
OBSN	HGT									
174	82	1 1.000	.818	.683	.462	.157	-.026	-.192	-.271	.064
174	1458	2	1.000	.685	.476	.145	-.097	-.282	-.345	-.214
174	3014	3		1.000	.646	.248	-.077	-.349	-.374	-.186
172	5579	4			1.000	.414	-.020	-.273	-.299	-.102
172	7193	5				1.000	.235	.071	.069	.074
154	9177	6					1.000	.779	.760	.274
139	11806	7						1.000	.965	.546
138	13638	8							1.000	.718
36	16221	9								1.000

TABLE 141

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KAZAN, WINTER LAT 55 47 N LONG 049 11 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3212	1.1048	.9221	.6919	.5738	.4438	.2996	.2228	.1512
	SX10	.5246	.2236	.1612	.1174	.1419	.1509	.1594	.0987	.1378
OBSN	HGT									
257	64	1	1.000	.581	.478	.311	.198	.045	.015	.012	-.742
257	1458	2		1.000	.804	.512	.221	-.062	-.238	-.215	-.885
256	3014	3			1.000	.578	.304	-.019	-.209	-.170	-.477
254	5579	4				1.000	.666	.307	.144	.175	.363
252	7193	5					1.000	.620	.542	.584	.978
237	9177	6						1.000	.786	.781	.093
169	11806	7							1.000	.968	-.340
169	13638	8								1.000	.355
4	16221	9									1.000

TABLE 142

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KAZAN, SPRING LAT 55 47 N LONG 049 11 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2748	1.0833	.9120	.6873	.5713	.4476	.3064	.2270	.1578
	SX10	.4685	.3277	.1950	.1335	.0823	.1331	.1662	.1002	.0413
OBSN	HGT									
238	64	1	1.000	.793	.689	.215	.089	-.295	-.456	-.501	-.380
238	1458	2		1.000	.729	.231	.025	-.426	-.585	-.586	-.319
238	3014	3			1.000	.472	.151	-.407	-.589	-.574	-.270
236	5579	4				1.000	.322	-.068	-.242	-.235	.006
236	7193	5					1.000	.635	.337	.331	.203
229	9177	6						1.000	.848	.826	.632
201	11806	7							1.000	.976	.858
179	13638	8								1.000	.916
37	16221	9									1.000

TABLE 143

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KAZAN, SUMMER LAT 55 47 N LONG 049 11 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2043	1.0390	.8874	.6749	.5685	.4532	.3178	.2397	.1603
	SX10	.2453	.1231	.0946	.0684	.2046	.0680	.1040	.0703	.0366
OBSN	HGT									
123	64	1	1.000	.556	.386	.266	-.005	-.138	-.236	-.272	-.256
123	1458	2		1.000	.654	.487	.065	-.193	-.450	-.518	-.470
123	3014	3			1.000	.560	.145	-.038	-.342	-.380	-.373
121	5579	4				1.000	.215	.175	-.161	-.229	-.324
120	7193	5					1.000	-.153	-.038	-.167	-.258
119	9177	6						1.000	.521	.453	.046
117	11806	7							1.000	.943	.536
107	13638	8								1.000	.767
104	16221	9									1.000

TABLE 144

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KAZAN, FALL LAT 55 47 N LONG 049 11 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2788	1.0866	.9117	.6865	.5717	.4499	.3093	.2306	.1562
		SX10	.5232	.2641	.1888	.0966	.0937	.1200	.1557	.0931	.0345
OBSN	HGT										
227	64	1	1.000	.835	.653	.651	.344	-.013	-.110	-.202	-.280
227	1458	2		1.000	.827	.685	.282	-.154	-.255	-.336	-.358
223	3014	3			1.000	.629	.228	-.200	-.331	-.403	-.528
220	5579	4				1.000	.564	.151	-.041	-.093	-.077
219	7193	5					1.000	.543	.290	.234	-.048
215	9177	6						1.000	.818	.816	.615
177	11806	7							1.000	.975	.807
168	13638	8								1.000	.898
34	16221	9									1.000

TABLE 145

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MOSCOW, WINTER LAT 55 45 N LONG 037 34 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3078	1.1061	.9232	.6915	.5711	.4459	.3026	.2248	.1524
	SX10	.5313	.2657	.1940	.1258	.0964	.1289	.1339	.0810	.1170
OBSN	HGT									
823	156	1 1.000	.680	.477	.321	.195	.052	.033	.021	-.613
821	1458	2	1.000	.751	.311	.160	-.127	-.208	-.205	-.085
817	3014	3		1.000	.319	.159	-.153	-.229	-.249	.194
765	5579	4			1.000	.571	.129	-.059	-.036	.883
762	7193	5				1.000	.683	.364	.383	.505
528	9177	6					1.000	.792	.827	-.149
393	11806	7						1.000	.963	-.935
389	13638	8							1.000	-.374
4	16221	9								1.000

TABLE 146

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MOSCOW, SPRING LAT 55 45 N LONG 037 34 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2638	1.0835	.9135	.6878	.5712	.4508	.3081	.2299	.1571
	SX10	.4104	.2716	.1750	.1075	.0934	.1250	.1416	.0895	.0329
OBSN	HGT									
783	156	1	1.000	.871	.732	.574	.235	-.200	-.360	-.429	-.101
781	1458	2		1.000	.822	.599	.194	-.332	-.512	-.573	-.262
777	3014	3			1.000	.711	.285	-.293	-.469	-.515	-.271
754	5579	4				1.000	.619	.005	-.256	-.260	.073
744	7193	5					1.000	.669	.239	.237	.171
587	9177	6						1.000	.753	.720	.279
444	11806	7							1.000	.967	.740
421	13638	8								1.000	.867
128	16221	9									1.000

TABLE 147

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MOSCOW, SUMMER LAT 55 45 N LONG 037 34 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2027	1.0424	.8891	.6755	.5660	.4539	.3187	.2404	.1605
	SX10	.1692	.1409	.1129	.0734	.0798	.0699	.1091	.0761	.0385
OBSN	HGT									
684	156	1 1.000	.832	.583	.456	.292	.117	-.156	-.192	-.273
684	1458	2	1.000	.665	.458	.261	-.001	-.357	-.386	-.441
682	3014	3		1.000	.536	.340	.119	-.262	-.298	-.395
674	5579	4			1.000	.687	.446	-.020	-.065	-.279
654	7193	5				1.000	.487	.056	.008	-.108
636	9177	6					1.000	.431	.370	.106
538	11806	7						1.000	.961	.626
437	13638	8							1.000	.805
428	16221	9								1.000

TABLE 148

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

MOSCOW, FALL LAT 55 45 N LONG 037 34 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2564	1.0794	.9075	.6848	.5702	.4512	.3126	.2323	.1580
	SX10	.4088	.2693	.1861	.1180	.1274	.1214	.1487	.0957	.0496
OBSN	HGT									
694	156	1 1.000	.757	.654	.574	.353	.265	.038	.002	.203
692	1458	2	1.000	.792	.627	.346	.136	-.189	-.254	-.275
689	3014	3		1.000	.714	.336	.043	-.236	-.227	-.072
667	5579	4			1.000	.506	.185	-.117	-.090	-.027
654	7193	5				1.000	.412	.197	.191	.061
561	9177	6					1.000	.727	.680	.122
443	11806	7						1.000	.963	.611
374	13638	8							1.000	.842
121	16221	9								1.000

TABLE 149

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SVERDLOVSK, WINTER LAT 56 48 N LONG 060 38 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3197	1.1164	.9283	.6926	.5721	.4458	.2995	.2224	.1481
	SX10	.5586	.2520	.1769	.1016	.1085	.1261	.1201	.0711	.0068
OBSN	HGT									
601	237	1 1.000	.615	.481	.310	.043	-.159	-.117	-.100	.022
600	1458	2	1.000	.729	.332	-.027	-.316	-.372	-.328	-.201
597	3014	3		1.000	.448	.076	-.214	-.387	-.347	-.321
498	5579	4			1.000	.706	.320	.032	.067	-.181
489	7193	5				1.000	.769	.452	.463	-.963
208	9177	6					1.000	.814	.797	-.637
152	11806	7						1.000	.963	.116
152	13638	8							1.000	.456
3	16221	9								1.000

TABLE 150

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SVERDLOVSK, SPRING LAT 56 48 N LONG 060 38 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2570	1.0855	.9139	.6872	.5695	.4492	.3038	.2266	.1554
		SX10	.4946	.3110	.2014	.1183	.0994	.1447	.1478	.0962	.0488
OBSN	HGT										
422	237	1	1.000	.818	.708	.495	.180	-.334	-.464	-.555	-.462
422	1458	2		1.000	.847	.536	.135	-.463	-.646	-.705	-.501
414	3014	3			1.000	.622	.221	-.393	-.556	-.593	-.524
350	5579	4				1.000	.673	-.156	-.395	-.440	-.315
330	7193	5					1.000	.549	.166	.152	-.008
188	9177	6						1.000	.729	.683	.529
118	11806	7							1.000	.957	.526
110	13638	8								1.000	.818
34	16221	9									1.000

TABLE 151

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SVERDLOVSK, SUMMER LAT 56 48 N LONG 060 38 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1892	1.0397	.8861	.6756	.5648	.4536	.3147	.2369	.1587
	SX10	.1950	.1829	.1029	.1355	.0805	.0858	.1163	.0776	.0369
OBSN	HGT									
407	237	1 1.000	.726	.691	.196	.299	.088	-.144	-.161	-.385
406	1458	2	1.000	.612	.121	.176	.133	-.420	-.431	-.520
398	3014	3		1.000	.334	.379	.093	-.094	-.153	-.463
344	5579	4			1.000	.253	-.029	-.118	-.171	-.198
299	7193	5				1.000	.630	.069	.018	-.118
279	9177	6					1.000	.370	.339	.243
130	11806	7						1.000	.968	.664
114	13638	8							1.000	.832
108	16221	9								1.000

TABLE 152

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SVERDLOVSK, FALL LAT 56 48 N LONG 060 38 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2606	1.0873	.9121	.6868	.5699	.4500	.3065	.2283	.1567
	SX10	.5497	.3305	.2255	.1431	.1096	.1610	.1494	.0945	.0410
OBSN	HGT									
487	237	1	1.000	.765	.628	.443	.311	-.187	-.246	-.347	-.248
486	1458	2		1.000	.766	.406	.175	-.298	-.442	-.519	-.334
482	3014	3			1.000	.432	.187	-.262	-.492	-.573	-.286
412	5579	4				1.000	.477	-.290	-.276	-.350	-.182
381	7193	5					1.000	.489	.176	.159	-.327
217	9177	6						1.000	.614	.590	.017
146	11806	7							1.000	.972	.556
137	13638	8								1.000	.765
19	16221	9									1.000

TABLE 153

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

UFA, WINTER LAT 54 45 N LONG 056 00 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.3431	1.1270	.9358	.6997	.5781	.4551	.3100	.2302	.1496
		SX10	.5991	.2488	.1623	.1119	.0981	.1237	.1302	.0750	.0527
OBSN	HGT										
407	197	1	1.000	.627	.382	.213	.062	-.133	-.064	-.061	-.275
407	1458	2		1.000	.634	.334	.058	-.330	-.312	-.274	.087
401	3014	3			1.000	.444	.214	-.191	-.266	-.250	-.135
305	5579	4				1.000	.712	.145	-.258	-.226	-.459
287	7193	5					1.000	.719	.134	.152	-.081
95	9177	6						1.000	.731	.686	-.016
59	11806	7							1.000	.944	-.300
58	13638	8								1.000	.287
8	16221	9									1.000

TABLE 154

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

UFA, SPRING LAT 54 45 N LONG 056 00 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2754	1.0918	.9192	.6938	.5745	.4576	.3172	.2367	.1623
	SX10	.6044	.3554	.2044	.1961	.1089	.1562	.1862	.1385	.0400
OBSN	HGT									
375	197	1 1.000	.861	.786	.312	.165	-.457	-.714	-.706	.091
375	1458	2	1.000	.890	.296	.030	-.472	-.746	-.740	-.063
363	3014	3		1.000	.348	.139	-.428	-.719	-.690	-.085
290	5579	4			1.000	.293	-.180	-.236	-.227	.261
242	7193	5				1.000	.472	.354	.373	.258
130	9177	6					1.000	.662	.698	.145
65	11806	7						1.000	.990	.830
56	13638	8							1.000	.943
30	16221	9								1.000

TABLE 155

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

UFA, SUMMER LAT 54 45 N LONG 056 00 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1950	1.0415	.8897	.6783	.5670	.4558	.3205	.2422	.1622
	SX10	.2494	.1785	.1203	.1236	.0673	.0614	.1150	.0960	.0444
OBSN	HGT									
298	197	1 1.000	.696	.434	.081	.212	.164	-.763	-.907	-.861
297	1458	2	1.000	.744	.174	.174	.116	-.765	-.873	-.897
295	3014	3		1.000	.359	.390	.285	-.729	-.827	-.707
263	5579	4			1.000	.767	.490	-.521	-.733	-.588
187	7193	5				1.000	.800	-.399	-.730	-.711
177	9177	6					1.000	.178	.371	.441
20	11806	7						1.000	.996	.940
8	13638	8							1.000	.963
8	16221	9								1.000

TABLE 156

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

UFA, FALL LAT 54 45 N LONG 056 00 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2762	1.0951	.9190	.6907	.5759	.4603	.3214	.2379	.1600
	SX10	.5705	.3381	.2074	.1275	.1121	.0943	.1359	.1072	.0545
OBSN	HGT									
312	197	1	1.000	.860	.700	.613	.483	.251	-.025	.078	.374
307	1458	2		1.000	.861	.696	.511	.260	-.224	-.166	.615
296	3014	3			1.000	.796	.544	.297	-.277	-.311	.413
254	5579	4				1.000	.739	.378	-.121	-.214	-.062
221	7193	5					1.000	.641	.338	.445	-.177
124	9177	6						1.000	.699	.727	.779
30	11806	7							1.000	.989	.931
20	13638	8								1.000	.960
8	16221	9									1.000

TABLE 157

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KUIBISHEV, WINTER LAT 53 14 N LONG 050 10 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3490	1.1281	.9379	.7020	.5826	.4570	.3118	.2313	.1575
	SX10	.6082	.2542	.1660	.1032	.1297	.1269	.1457	.0926	.0711
OBSN	HGT									
300	136	1.000	.617	.449	.208	-.061	.026	-.020	-.057	-.359
300	1458		1.000	.670	.353	-.086	-.233	-.339	-.330	-.243
299	3014			1.000	.562	.004	-.196	-.410	-.397	-.637
291	5579				1.000	.484	.100	-.110	-.144	-.323
291	7193					1.000	.365	.154	.113	.026
237	9177						1.000	.723	.667	-.101
199	11806							1.000	.972	.882
196	13638								1.000	.965
12	16221									1.000

TABLE 158

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KUIBISHEV, SPRING LAT 53 14 N LONG 050 10 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2875	1.0960	.9239	.6981	.5818	.4612	.3179	.2371	.1616
	SX10	.6027	.3300	.2035	.1087	.0814	.1121	.1631	.1127	.0478
OBSN	HGT									
306	136	1 1.000	.803	.628	.466	.194	-.197	-.396	-.458	-.244
305	1458	2	1.000	.848	.621	.213	-.358	-.619	-.670	-.454
303	3014	3		1.000	.674	.205	-.410	-.640	-.675	-.466
299	5579	4			1.000	.659	-.068	-.350	-.380	-.207
290	7193	5				1.000	.526	.200	.178	.118
247	9177	6					1.000	.645	.601	.497
203	11806	7						1.000	.972	.676
193	13638	8							1.000	.851
94	16221	9								1.000

TABLE 159

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KUIBISHEV, SUMMER LAT 53 14 N LONG 050 10 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2158	1.0510	.8976	.6873	.5753	.4620	.3233	.2450	.1644
		SX10	.2153	.1806	.1315	.1818	.1227	.0881	.1070	.0798	.0408
OBSN	HGT										
181	136	1	1.000	.808	.622	.327	.426	.170	-.047	-.265	-.296
181	1458	2		1.000	.655	.285	.371	.056	-.366	-.511	-.525
181	3014	3			1.000	.434	.290	-.047	-.379	-.527	-.572
180	5579	4				1.000	.049	-.244	-.271	-.418	-.387
176	7193	5					1.000	.280	.059	-.013	-.150
175	9177	6						1.000	.491	.441	.220
113	11806	7							1.000	.972	.779
105	13638	8								1.000	.893
102	16221	9									1.000

TABLE 160

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KUIBISHEV, FALL LAT 53 14 N LONG 050 10 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2901	1.1023	.9258	.6983	.5811	.4591	.3164	.2367	.1599
	SX10	.5688	.3085	.1929	.1532	.1063	.1249	.1407	.0947	.0457
OBSN	HGT									
237	136	1 1.000	.794	.659	.442	.454	.179	.128	.051	.139
237	1458	2	1.000	.856	.562	.523	.107	-.069	-.129	-.172
237	3014	3		1.000	.681	.609	.137	-.164	-.202	-.347
232	5579	4			1.000	.535	.146	-.090	-.116	-.216
230	7193	5				1.000	.579	.292	.275	-.045
215	9177	6					1.000	.670	.617	.276
185	11806	7						1.000	.971	.803
173	13638	8							1.000	.905
95	16221	9								1.000

TABLE 161

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KYEV, WINTER LAT 50 24 N LONG 030 27 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2891	1.1001	.9210	.6938	.5764	.4564	.3115	.2316	.1563
	SX10	.4526	.2733	.1952	.1145	.1037	.1096	.1452	.0911	.0855
OBSN	HGT									
690	179	1	1.000	.717	.518	.372	.158	-.062	-.297	-.334	-.278
690	1458	2		1.000	.723	.516	.172	-.291	-.559	-.552	-.380
653	3014	3			1.000	.570	.158	-.387	-.495	-.509	-.150
601	5579	4				1.000	.610	-.029	-.417	-.387	-.165
587	7193	5					1.000	.391	.023	.068	.092
201	9177	6						1.000	.633	.576	-.354
153	11806	7							1.000	.957	.490
148	13638	8								1.000	.908
10	16221	9									1.000

TABLE 162

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KYEV, SPRING LAT 50 24 N LONG 030 27 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2458	1.0794	.9122	.6900	.5760	.4593	.3142	.2349	.1587
	SX10	.4070	.2921	.1731	.1227	.1402	.0849	.1246	.0763	.0334
OBSN	HGT									
668	179	1	1.000	.794	.625	.435	.153	-.126	-.234	-.321	-.274
667	1458	2		1.000	.798	.469	.145	-.185	-.409	-.470	-.363
639	3014	3			1.000	.617	.273	-.178	-.361	-.413	-.439
560	5579	4				1.000	.396	.134	-.082	-.103	-.223
516	7193	5					1.000	.349	.196	.173	-.257
295	9177	6						1.000	.665	.677	.330
161	11806	7							1.000	.957	.685
159	13638	8								1.000	.825
71	16221	9									1.000

TABLE 163

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KYEV, SUMMER LAT 50 24 N LONG 030 27 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1973	1.0451	.8929	.6811	.5716	.4584	.3241	.2459	.1646
	SX10	.1770	.1723	.1411	.1847	.1594	.0671	.0940	.0670	.0375
OBSN	HGT									
630	179	1	1.000	.667	.452	.119	.105	.021	-.308	-.427	-.439
630	1458	2		1.000	.437	.102	.072	-.005	-.370	-.455	-.440
617	3014	3			1.000	.216	.132	-.147	-.220	-.234	-.206
571	5579	4				1.000	.175	.100	-.113	-.300	-.456
491	7193	5					1.000	.553	.013	-.057	-.063
457	9177	6						1.000	.167	.106	.068
106	11806	7							1.000	.953	.677
83	13638	8								1.000	.848
82	16221	9									1.000

TABLE 164

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KYEV, FALL LAT 50 24 N LONG 030 27 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2461	1.0759	.9069	.6877	.5754	.4598	.3238	.2433	.1624
	SX10	.3375	.2401	.1492	.1133	.0917	.0793	.1072	.0711	.0358
OBSN	HGT									
543	179	1 1.000	.707	.612	.432	.403	.249	.023	-.101	-.223
543	1458	2	1.000	.767	.455	.380	.166	-.189	-.318	-.403
514	3014	3		1.000	.509	.456	.075	-.258	-.309	-.332
469	5579	4			1.000	.401	.264	-.114	-.286	-.357
435	7193	5				1.000	.490	.181	.109	-.056
328	9177	6					1.000	.471	.531	.331
79	11806	7						1.000	.951	.548
67	13638	8							1.000	.758
51	16221	9								1.000

TABLE 165

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LVOV, WINTER LAT 49 49 N LONG 023 57 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2569	1.0981	.9197	.6926	.5747	.4524	.3093	.2305	.1549
		SX10	.4427	.2898	.2162	.1403	.1058	.1392	.1529	.0940	.0923
OBSN	HGT										
676	325	1	1.000	.611	.369	.235	.126	-.047	-.210	-.214	-.586
675	1458	2		1.000	.633	.387	.133	-.165	-.412	-.409	-.718
672	3014	3			1.000	.464	.061	-.160	-.273	-.300	-.345
587	5579	4				1.000	.412	.038	-.139	-.190	-.123
571	7193	5					1.000	.577	.216	.199	.079
287	9177	6						1.000	.682	.695	.141
192	11806	7							1.000	.971	.703
175	13638	8								1.000	.897
15	16221	9									1.000

TABLE 166

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LVOV, SPRING LAT 49 49 N LONG 023 57 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2240	1.0769	.9116	.6899	.5754	.4588	.3144	.2349	.1580
	SX10	.3406	.2564	.1846	.1270	.0904	.1201	.1157	.0700	.0325
OBSN	HGT									
652	325	1 1.000	.741	.571	.441	.130	-.110	-.337	-.394	-.535
649	1458	2	1.000	.642	.349	.114	-.183	-.302	-.453	-.414
646	3014	3		1.000	.373	.086	-.148	-.402	-.442	-.277
574	5579	4			1.000	.578	-.080	-.315	-.370	-.533
532	7193	5				1.000	.337	-.043	.052	.001
339	9177	6					1.000	.369	.463	.579
171	11806	7						1.000	.956	.736
159	13638	8							1.000	.854
78	16221	9								1.000

TABLE 167

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LVOV, SUMMER LAT 49 49 N LONG 023 57 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.1843	1.0460	.8926	.6801	.5709	.4578	.3236	.2452	.1641
		SX10	.2048	.1913	.1396	.1401	.1553	.0806	.1100	.0748	.0377
OBSN	HGT										
614	325	1	1.000	.645	.555	.304	.231	.142	-.245	-.370	-.320
614	1458	2		1.000	.513	.259	.178	.127	-.257	-.376	-.307
614	3014	3			1.000	.313	.212	.148	-.198	-.331	-.407
603	5579	4				1.000	.297	.233	-.247	-.456	-.352
537	7193	5					1.000	.492	-.110	-.256	-.274
502	9177	6						1.000	-.099	-.228	.167
115	11806	7							1.000	.858	.688
85	13638	8								1.000	.846
83	16221	9									1.000

TABLE 168

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

LVOV, FALL LAT 49 49 N LONG 023 57 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2202	1.0710	.9045	.6864	.5731	.4574	.3238	.2431	.1641
		SX10	.2831	.2260	.1637	.1645	.0901	.1101	.1133	.0790	.0383
OBSN	HGT										
560	325	1	1.000	.750	.573	.294	.320	.110	.095	.039	.019
558	1458	2		1.000	.724	.278	.306	-.028	-.192	-.167	-.173
556	3014	3			1.000	.314	.231	-.029	-.165	-.092	-.360
526	5579	4				1.000	.263	.131	-.025	-.064	-.098
485	7193	5					1.000	.691	.302	.266	-.082
366	9177	6						1.000	.581	.676	.240
118	11806	7							1.000	.927	.459
92	13638	8								1.000	.795
51	16221	9									1.000

TABLE 169

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ODESSA, WINTER LAT 46 29 N LONG 030 38 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2929	1.0949	.9203	.6933	.5777	.4591	.3153	.2336	.1548
	SX10	.4059	.2637	.1846	.0948	.0840	.0987	.1433	.0871	.0635
OBSN	HGT									
563	64	1.000	.647	.510	.275	.068	-.158	-.309	-.336	-.663
563	1458		1.000	.741	.444	.125	-.260	-.683	-.695	-.663
558	3014			1.000	.514	.071	-.435	-.666	-.682	-.639
469	5579				1.000	.397	-.206	-.543	-.533	-.515
442	7193					1.000	.470	.194	.311	.085
150	9177						1.000	.591	.486	-.191
82	11806							1.000	.956	.705
74	13638								1.000	.907
14	16221									1.000

TABLE 170

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ODESSA, SPRING LAT 46 29 N LONG 030 38 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2560	1.0725	.9090	.6892	.5757	.4608	.3212	.2397	.1607
	SX10	.3566	.2633	.1760	.1395	.1039	.0665	.0979	.0689	.0312
OBSN	HGT									
540	64	1 1.000	.734	.554	.339	.206	.092	-.441	-.474	.062
539	1458	2	1.000	.754	.430	.231	.099	-.576	-.597	.043
536	3014	3		1.000	.407	.192	.074	-.435	-.469	.034
486	5579	4			1.000	.283	.171	-.344	-.307	.166
414	7193	5				1.000	.575	-.153	-.085	.223
239	9177	6					1.000	.432	.458	.391
85	11806	7						1.000	.955	.607
80	13638	8							1.000	.835
49	16221	9								1.000

TABLE 171

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ODESSA, SUMMER LAT 46 29 N LONG 030 38 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2041	1.0398	.8898	.6814	.5703	.4582	.3263	.2491	.1672
	SX10	.2104	.1488	.1354	.2282	.1207	.0790	.0857	.0564	.0360
OBSN	HGT									
559	64	1	1.000	.594	.343	.105	.156	.011	-.251	-.347	-.358
559	1458	2		1.000	.494	.140	.281	.102	-.130	.033	-.032
555	3014	3			1.000	.101	.088	-.123	-.279	-.604	-.497
544	5579	4				1.000	.098	-.040	-.226	-.706	-.543
450	7193	5					1.000	.473	.083	.067	.020
424	9177	6						1.000	.238	.387	.338
55	11806	7							1.000	.935	.432
9	13638	8								1.000	.689
9	16221	9									1.000

TABLE 172

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ODESSA, FALL LAT 46 29 N LONG 030 38 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2467	1.0695	.9040	.6866	.5756	.4604	.3258	.2439	.1639
		SX10	.2986	.2356	.1614	.1385	.1226	.0508	.0866	.0671	.0403
OBSN	HGT										
510	64	1	1.000	.865	.676	.352	.250	.276	-.123	-.311	-.534
510	1458	2		1.000	.754	.360	.210	.217	-.385	-.529	-.556
502	3014	3			1.000	.330	.187	.155	-.491	-.474	-.395
472	5579	4				1.000	.343	.138	-.370	-.367	-.563
425	7193	5					1.000	.268	-.271	-.248	-.017
354	9177	6						1.000	.327	.539	.250
74	11806	7							1.000	.915	.599
47	13638	8								1.000	.839
35	16221	9									1.000

TABLE 173

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SARATOV, WINTER LAT 51 34 N LONG 046 02 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3323	1.1214	.9314	.6962	.5743	.4477	.3064	.2269	.1444
	SX10	.6794	.2487	.1980	.1159	.1013	.1356	.1397	.0860	.0834
OBSN	HGT									
264	156	1	1.000	.412	.125	-.030	-.107	-.234	-.201	-.182	.636
264	1458	2		1.000	.544	.136	-.048	-.380	-.544	-.504	.479
263	3014	3			1.000	.172	-.103	-.387	-.531	-.502	.704
208	5579	4				1.000	.439	-.049	-.122	-.136	.401
190	7193	5					1.000	.424	.069	.062	-.975
122	9177	6						1.000	.518	.571	-.737
108	11806	7							1.000	.937	-.785
107	13638	8								1.000	.786
3	16221	9									1.000

TABLE 174

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SARATOV, SPRING LAT 51 34 N LONG 046 02 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2611	1.0803	.9129	.6920	.5759	.4549	.3158	.2351	.1603
		SX10	.5199	.3345	.1917	.1233	.0809	.1106	.1622	.1142	.0500
OBSN	HGT										
263	156	1	1.000	.762	.619	.360	.193	-.215	-.453	-.514	-.552
263	1456	2		1.000	.841	.337	.248	-.271	-.591	-.641	-.726
254	3014	3			1.000	.402	.362	-.185	-.523	-.552	-.664
225	5579	4				1.000	.571	.112	-.121	-.150	-.327
188	7193	5					1.000	.680	.329	.305	.049
164	9177	6						1.000	.781	.743	.460
144	11806	7							1.000	.978	.795
139	13638	8								1.000	.925
58	16221	9									1.000

TABLE 175

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SARATOV, SUMMER LAT 51 34 N LONG 046 02 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1949	1.0390	.8896	.6794	.5701	.4562	.3199	.2415	.1624
	SX10	.1922	.1660	.2035	.1229	.0833	.0688	.0945	.0631	.0402
OBSN	HGT									
163	156	1	1.000	.746	.311	.178	.382	.057	-.238	-.404	-.416
161	1458	2		1.000	.384	.160	.253	-.079	-.462	-.549	-.467
132	3014	3			1.000	.338	.352	.042	-.200	-.347	-.379
97	5579	4				1.000	.006	-.092	-.107	-.177	-.212
64	7193	5					1.000	.652	.212	.059	-.058
63	9177	6						1.000	.570	.412	.141
42	11806	7							1.000	.936	.601
37	13638	8								1.000	.822
35	16221	9									1.000

TABLE 176

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SARATOV, FALL LAT 51 34 N LONG 046 02 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2689	1.0889	.9141	.6925	.5756	.4554	.3142	.2354	.1590
		SX10	.4653	.3055	.1772	.1467	.0808	.0982	.1416	.0885	.0551
OBSN	HGT										
247	156	1	1.000	.762	.624	.352	.497	.297	.167	.076	-.064
246	1458	2		1.000	.644	.330	.307	.002	-.094	-.183	-.276
234	3014	3			1.000	.463	.355	-.107	-.269	-.391	-.450
175	5579	4				1.000	.162	-.112	-.187	-.241	.026
166	7193	5					1.000	.501	.204	.182	.124
133	9177	6						1.000	.680	.707	.449
101	11806	7							1.000	.955	.477
98	13638	8								1.000	.725
34	16221	9									1.000

TABLE 177

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KHARKOV, WINTER LAT 49 56 N LONG 036 17 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2986	1.1022	.9220	.6946	.5776	.4551	.3095	.2302	.1527
		SX10	.4882	.3243	.2025	.1261	.1159	.1481	.1442	.0910	.0696
OBSN	HGT										
457	152	1	1.000	.776	.595	.422	.235	-.108	-.076	-.110	-.566
456	1458	2		1.000	.666	.450	.180	-.315	-.256	-.275	-.613
452	3014	3			1.000	.540	.243	-.238	-.345	-.343	-.477
443	5579	4				1.000	.480	.058	-.061	-.069	-.347
435	7193	5					1.000	.509	.307	.366	.079
203	9177	6						1.000	.631	.648	.481
174	11806	7							1.000	.957	.081
172	13638	8								1.000	.537
14	16221	9									1.000

TABLE 178

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KHARKOV, SPRING LAT 49 56 N LONG 036 17 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2539	1.0815	.9125	.6909	.5772	.4583	.3140	.2346	.1593
		SX10	.4345	.2953	.1863	.1312	.1326	.0962	.1233	.0808	.0375
OBSN	HGT										
459	152	1	1.000	.801	.681	.500	.249	-.036	-.382	-.479	-.397
458	1458	2		1.000	.795	.522	.252	-.169	-.476	-.546	-.547
452	3014	3			1.000	.608	.267	-.158	-.520	-.586	-.433
437	5579	4				1.000	.276	.148	-.241	-.276	-.178
431	7193	5					1.000	.369	.133	.104	-.095
277	9177	6						1.000	.558	.537	.365
185	11806	7							1.000	.959	.559
182	13638	8								1.000	.756
76	16221	9									1.000

TABLE 179

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KHARKOV, SUMMER LAT 49 56 N LONG 036 17 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.1984	1.0391	.8898	.6798	.5703	.4577	.3235	.2451	.1646
		SX10	.1825	.1508	.1287	.1548	.0946	.0610	.0935	.0708	.0370
OBSN	HGT										
444	152	1	1.000	.846	.495	.221	.273	.182	-.027	.034	-.137
443	1458	2		1.000	.568	.258	.305	.148	-.167	-.088	-.283
441	3014	3			1.000	.265	.434	.271	-.012	.030	-.437
435	5579	4				1.000	.010	.171	-.069	-.058	-.274
430	7193	5					1.000	.414	.083	.059	-.258
412	9177	6						1.000	.355	.273	-.044
112	11806	7							1.000	.925	.599
104	13638	8								1.000	.834
102	16221	9									1.000

TABLE 180

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

KHARKOV, FALL LAT 49 56 N LONG 036 17 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2559	1.0806	.9090	.6898	.5761	.4602	.3201	.2400	.1612
	SX10	.4548	.2947	.1563	.1363	.0876	.0886	.1158	.0759	.0344
OBSN	HGT									
376	152	1	1.000	.542	.468	.197	.225	.113	.107	-.024	-.063
376	1458	2		1.000	.684	.303	.249	.048	-.187	-.264	-.210
375	3014	3			1.000	.492	.389	.103	-.269	-.269	-.018
374	5579	4				1.000	.255	.140	-.113	-.121	.170
369	7193	5					1.000	.322	.186	.232	.367
277	9177	6						1.000	.602	.619	.484
103	11806	7							1.000	.954	.693
102	13638	8								1.000	.840
65	16221	9									1.000

TABLE 181

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

VOROPONOVO, WINTER LAT 48 41 N LONG 044 21 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.3179	1.1070	.9249	.6951	.5778	.4551	.3120	.2321	.1611
		SX10	.6258	.2636	.1823	.0993	.1109	.1383	.1495	.0963	.0728
OBSN	HGT										
418	145	1	1.000	.527	.317	.224	.061	-.072	-.044	-.049	-.284
417	1458	2		1.000	.741	.546	.111	-.262	-.356	-.354	-.529
412	3014	3			1.000	.687	.188	-.297	-.401	-.383	-.580
302	5579	4				1.000	.643	.036	-.178	-.168	-.249
288	7193	5					1.000	.533	.187	.190	.114
161	9177	6						1.000	.767	.773	.766
132	11806	7							1.000	.962	.103
129	13638	8								1.000	.375
7	16221	9									1.000

TABLE 182

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

VOROPONOVO, SPRING LAT 48 41 N LONG 044 21 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2574	1.0777	.9101	.6885	.5745	.4580	.3188	.2367	.1619
		SX10	.4879	.3278	.1904	.1009	.0780	.1292	.1310	.0954	.0303
OBSN	HGT										
418	145	1	1.000	.800	.681	.552	.102	-.191	-.571	-.549	-.285
417	1458	2		1.000	.705	.560	.110	-.261	-.643	-.598	-.280
412	3014	3			1.000	.740	.347	-.193	-.581	-.536	-.468
334	5579	4				1.000	.687	.001	-.321	-.269	-.011
246	7193	5					1.000	.389	.205	.244	.164
178	9177	6						1.000	.471	.384	-.432
125	11806	7							1.000	.957	.603
104	13638	8								1.000	.871
40	16221	9									1.000

TABLE 183

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

VOROPONOVO, SUMMER LAT 48 41 N LONG 044 21 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.1922	1.0345	.8876	.6785	.5699	.4570	.3232	.2463	.1666
		SX10	.2144	.1763	.1232	.1351	.1348	.0659	.0972	.0657	.0402
OBSN	HGT										
366	145	1	1.000	.646	.421	.066	-.015	-.024	-.192	-.222	-.209
366	1458	2		1.000	.442	.042	-.003	.025	-.182	-.222	-.219
366	3014	3			1.000	.198	.123	.140	-.177	-.244	-.320
356	5579	4				1.000	.265	-.297	-.236	-.372	-.319
171	7193	5					1.000	-.083	-.226	-.242	-.125
169	9177	6						1.000	.486	.466	.040
78	11806	7							1.000	.922	.242
78	13638	8								1.000	.604
77	16221	9									1.000

TABLE 184

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

VOROPONOVO, FALL LAT 48 41 N LONG 044 21 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2582	1.0753	.9063	.6868	.5744	.4589	.3205	.2409	.1623
	SX10	.4194	.2656	.1754	.1160	.0760	.0750	.1126	.0803	.0360
OBSN	HGT									
334	145	1	1.000	.871	.686	.432	.382	.134	.049	-.078	.066
334	1458	2		1.000	.805	.463	.411	.084	-.119	-.202	-.192
331	3014	3			1.000	.528	.546	.223	-.088	-.107	-.267
279	5579	4				1.000	.700	.422	.026	-.004	-.157
176	7193	5					1.000	.714	.217	.211	-.063
159	9177	6						1.000	.507	.546	.209
101	11806	7							1.000	.949	.638
95	13638	8								1.000	.824
63	16221	9									1.000

TABLE 185

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ROSTOV NA DONU, WINTER LAT 47 15 N LONG 039 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.3040	1.0965	.9208	.6948	.5830	.4561	.3133	.2331	.1573
	SX10	.4949	.2732	.1740	.1382	.1722	.1086	.1354	.0832	.0706
OBSN	HGT									
609	77	1	1.000	.546	.378	.153	.188	-.081	-.144	-.153	-.112
607	1458	2		1.000	.772	.323	.172	-.263	-.488	-.521	-.497
596	3014	3			1.000	.406	.136	-.213	-.442	-.475	-.496
469	5579	4				1.000	.319	-.158	-.318	-.320	-.273
449	7193	5					1.000	.434	.044	.048	-.003
314	9177	6						1.000	.689	.695	.216
289	11806	7							1.000	.955	.168
287	13638	8								1.000	.585
39	16221	9									1.000

TABLE 186

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ROSTOV NA DONU, SPRING LAT 47 15 N LONG 039 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2583	1.0730	.9088	.6892	.5813	.4580	.3174	.2373	.1601
	SX10	.4391	.2923	.1822	.1171	.1836	.0900	.1236	.0872	.0428
OBSN	HGT									
616	77	1	1.000	.758	.587	.406	.260	-.110	-.405	-.494	-.567
615	1458	2		1.000	.802	.532	.323	-.167	-.642	-.698	-.678
605	3014	3			1.000	.538	.266	-.229	-.643	-.697	-.695
519	5579	4				1.000	.321	-.057	-.400	-.422	-.481
434	7193	5					1.000	.328	-.195	-.220	-.379
347	9177	6						1.000	.614	.596	.307
295	11806	7							1.000	.971	.854
283	13638	8								1.000	.932
141	16221	9									1.000

TABLE 187

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ROSTOV NA DONU, SUMMER LAT 47 15 N LONG 039 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2023	1.0342	.8864	.6783	.5713	.4575	.3248	.2475	.1671
	SX10	.2990	.1674	.1189	.1156	.3109	.1162	.0865	.0630	.0428

OBSN	HGT									
611	77	1	1.000	.427	.302	.030	.028	-.016	-.194	-.245	-.286
610	1458	2		.000	.629	.205	-.027	.065	-.139	-.272	-.435
601	3014	3			1.000	.324	.024	-.072	-.208	-.369	-.492
553	5579	4				1.000	.016	-.007	-.282	-.333	-.345
450	7193	5					1.000	.104	-.131	-.190	-.304
419	9177	6						1.000	.198	.047	-.302
304	11806	7							1.000	.844	.387
289	13638	8								1.000	.745
279	16221	9									1.000

TABLE 188

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

ROSTOV NA DONU, FALL LAT 47 15 N LONG 039 49 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2580	1.0708	.9039	.6876	.5797	.4590	.3212	.2411	.1625
	SX10	.4073	.2523	.1761	.1742	.1817	.1326	.1196	.0804	.0390
OBSN	HGT									
538	77	1	1.000	.789	.517	.254	.135	-.061	-.055	-.166	-.285
535	1458	2		1.000	.713	.346	.167	-.132	-.225	-.333	-.411
532	3014	3			1.000	.074	.015	-.081	-.222	-.305	-.452
452	5579	4				1.000	.289	-.248	-.243	-.286	-.209
393	7193	5					1.000	.088	-.144	-.178	-.065
354	9177	6						1.000	.102	.136	.160
286	11806	7							1.000	.913	.471
278	13638	8								1.000	.733
186	16221	9									1.000

TABLE 189

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TBILISI, WINTER LAT 41 41 N LONG 044 57 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.2245	1.0926	.9206	.6961	.5811	.4592	.3205	.2383	.1615
	SX10	.3141	.2702	.2032	.1208	.1441	.1066	.1106	.0818	.0514
OBSN	HGT									
249	490	1	1.000	.600	.418	.328	.101	.158	.128	.185	.254
249	1458	2		1.000	.667	.411	.139	.079	-.070	-.082	.014
247	3014	3			1.000	.526	.176	.042	-.193	-.128	.139
239	5579	4				1.000	.419	.145	-.049	.089	.287
220	7193	5					1.000	.101	.044	.098	.370
211	9177	6						1.000	.439	.498	.433
162	11806	7							1.000	.944	.800
134	13638	8								1.000	.919
52	16221	9									1.000

TABLE 190

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TBILISI, SPRING LAT 41 41 N LONG 044 57 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.1853	1.0687	.9030	.6888	.5765	.4605	.3256	.2440	.1639
		SX10	.3065	.2678	.2147	.1535	.0938	.0761	.1025	.0903	.0579
OBSN	HGT										
236	490	1	1.000	.800	.473	.302	.297	.060	-.388	-.437	-.171
236	1458	2		1.000	.547	.346	.394	.092	-.370	-.440	-.207
235	3014	3			1.000	.299	.243	.015	-.265	-.314	-.169
231	5579	4				1.000	.640	-.040	-.152	-.200	-.028
222	7193	5					1.000	.440	.037	.014	.128
218	9177	6						1.000	.410	.420	.364
195	11806	7							1.000	.924	.622
157	13638	8								1.000	.863
118	16221	9									1.000

TABLE 191

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TBILISI, SUMMER LAT 41 41 N LONG 044 57 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1430	1.0341	.8848	.6787	.5699	.4540	.3260	.2525	.1746
	SX10	.2276	.2024	.1817	.2532	.1983	.1049	.0893	.0770	.0699
OBSN	HGT									
227	490	1	1.000	.770	.493	.294	.288	.544	.372	.158	.049
227	1458	2		1.000	.548	.320	.358	.591	.341	.153	.046
224	3014	3			1.000	.210	.184	.402	.259	.218	.102
220	5579	4				1.000	.084	-.016	-.077	-.238	-.159
208	7193	5					1.000	.238	.228	.116	.134
208	9177	6						1.000	.699	.473	.183
200	11806	7							1.000	.893	.517
149	13638	8								1.000	.838
148	16221	9									1.000

TABLE 192

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

TBILISI, FALL LAT 41 41 N LONG 044 57 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1839	1.0678	.9042	.6894	.5760	.4596	.3280	.2476	.1675
	SX10	.3776	.3009	.2065	.1965	.1034	.0897	.0935	.0778	.0543
OBSN	HGT									
238	490	1 1.000	.774	.652	.350	.489	.299	-.028	-.137	-.090
238	1458	2	1.000	.855	.397	.591	.325	-.079	-.253	-.199
237	3014	3		1.000	.446	.667	.380	-.084	-.221	-.156
229	5579	4			1.000	.296	.111	-.138	-.292	-.144
223	7193	5				1.000	.610	.084	-.019	-.095
221	9177	6					1.000	.357	.332	.047
204	11806	7						1.000	.884	.348
119	13638	8							1.000	.787
97	16221	9								1.000

TABLE 193

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

YEREVAN, WINTER LAT 40 08 N LONG 044 28 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.1860	1.1076	.9250	.6958	.5812	.4601	.3212	.2392	.1618
		SX10	.4679	.3181	.2093	.1443	.1488	.1147	.1211	.0898	.0622
OBSN	HGT										
342	907	1	1.000	.739	.382	.372	.145	.363	.316	.478	.666
342	1458	2		1.000	.539	.470	.208	.355	.372	.428	.620
337	3014	3			1.000	.626	.193	.281	.137	.222	.566
285	5579	4				1.000	.503	.393	.214	.367	.636
250	7193	5					1.000	.459	.188	.350	.707
203	9177	6						1.000	.491	.505	.519
165	11806	7							1.000	.937	.737
140	13638	8								1.000	.921
60	16221	9									1.000

TABLE 194

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

YEREVAN, SPRING LAT 40 08 N LONG 044 28 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.1276	1.0564	.9000	.6884	.5764	.4603	.3243	.2430	.1643
		SX10	.3093	.3026	.2006	.1952	.1755	.1098	.1044	.0929	.0634
OBSN	HGT										
344	907	1	1.000	.692	.662	.344	.220	.092	-.268	-.363	-.077
343	1458	2		1.000	.611	.324	.142	-.011	-.290	-.351	-.098
341	3014	3			1.000	.390	.245	.092	-.404	-.474	-.231
327	5579	4				1.000	.062	-.016	-.285	-.312	-.065
247	7193	5					1.000	.198	-.094	-.055	.221
230	9177	6						1.000	.261	.292	.440
184	11806	7							1.000	.937	.579
133	13638	8								1.000	.822
94	16221	9									1.000

TABLE 195

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

YEREVAN, SUMMER LAT 40 08 N LONG 044 28 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.0883	1.0190	.8746	.6764	.5671	.4530	.3271	.2548	.1771
		SX10	.2476	.1853	.1672	.2512	.1219	.1028	.0798	.0668	.0605
OBSN	HGT										
294	907	1	1.000	.655	.463	.154	.274	.341	.034	-.140	-.203
294	1458	2		1.000	.636	.149	.373	.408	.003	-.265	-.386
294	3014	3			1.000	.112	.226	.191	-.125	-.315	-.427
288	5579	4				1.000	-.254	-.218	-.266	-.445	-.292
215	7193	5					1.000	.532	.206	.075	-.211
212	9177	6						1.000	.289	-.028	-.334
203	11806	7							1.000	.822	.238
166	13638	8								1.000	.727
164	16221	9									1.000

TABLE 196

AIR DENSITY MEANS AND STANDARD DEVIATIONS, (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

YEREVAN, FALL LAT 40 08 N LONG 044 28 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1333	1.0576	.8983	.6876	.5773	.4609	.3291	.2502	.1699
	SX10	.3946	.3375	.2340	.1870	.1337	.1193	.1153	.0906	.0719
OBSN	HGT									
329	907	1	1.000	.810	.664	.505	.595	.472	.205	.029	-.079
329	1458	2		1.000	.780	.502	.610	.476	.177	-.016	-.046
328	3014	3			1.000	.482	.478	.428	.080	-.144	-.125
314	5579	4				1.000	.439	.225	.142	-.016	.133
239	7193	5					1.000	.693	.458	.373	.202
235	9177	6						1.000	.543	.427	.143
217	11806	7							1.000	.850	.238
176	13638	8								1.000	.704
149	16221	9									1.000

TABLE 197

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

BAKU, WINTER LAT 41 00 N LONG 049 00 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2756	1.0796	.9120	.6959	.5817	.4606	.3198	.2378	.1610
		SX10	.3006	.2503	.2195	.1761	.1254	.0888	.1219	.0742	.0502
OBSN	HGT										
175	30	1	1.000	.415	.265	.143	.074	-.187	-.294	-.357	-.393
175	1458	2		1.000	.503	.311	.099	-.096	-.288	-.418	-.296
175	3014	3			1.000	.160	-.078	-.268	-.330	-.462	-.436
173	5579	4				1.000	-.131	-.275	-.565	-.377	-.256
169	7193	5					1.000	.352	.056	.073	.165
162	9177	6						1.000	.276	.272	.253
128	11806	7							1.000	.950	.626
106	13638	8								1.000	.847
36	16221	9									1.000

TABLE 108

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

SAKU, SPRING — LAT 41 00 N — LONG 049 00 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2545	1.0676	.9015	.6898	.5770	.4595	.3233	.2425	.1641
		SX10	.3329	.3344	.2318	.1677	.1035	.0924	.1175	.0900	.0541
OBSN	HGT										
198	30	1	1.000	.765	.660	.347	.415	-.061	-.403	-.486	-.504
198	1458	2		1.000	.708	.298	.320	-.049	-.457	-.565	-.526
198	3014	3			1.000	.306	.166	-.149	-.383	-.457	-.476
196	5579	4				1.000	.226	-.097	-.373	-.360	-.264
195	7193	5					1.000	.240	-.203	-.183	-.042
184	9177	6						1.000	.302	.351	.146
163	11806	7							1.000	.924	.309
130	13638	8								1.000	.644
39	16221	9									1.000

TABLE 109

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

BAKU, SUMMER LAT 41 00 N LONG 049 00 E

	HGT	1	2	3	4	5	6	7	8	9
	M	1.1942	1.0226	.8760	.6766	.5695	.4547	.3268	.2540	.1756
	SX10	.2129	.1533	.1101	.1624	.1642	.1131	.0658	.0663	.0627
OBSN	HGT									
166	30	1 1.000	.342	.309	.056	.065	.050	-.170	-.348	-.471
165	1458	2	1.000	.694	.201	.129	.007	-.357	-.426	-.395
165	3014	3		1.000	.199	.125	.067	-.357	-.522	-.526
164	5579	4			1.000	-.016	-.095	-.397	-.483	-.447
164	7193	5				1.000	-.037	-.365	-.417	-.398
164	9177	6					1.000	.017	-.270	-.346
151	11806	7						1.000	.850	.552
127	13638	8							1.000	.883
126	16221	9								1.000

TABLE 200

AIR DENSITY MEANS AND STANDARD DEVIATIONS (IN KILOGRAMS PER CUBIC METER), BY GEOMETRIC HEIGHTS (IN METERS), WITH CORRELATIONS BETWEEN HEIGHTS

BAKU, FALL LAT 41 00 N LONG 049 00 E

		HGT	1	2	3	4	5	6	7	8	9
		M	1.2338	1.0588	.8975	.6866	.5787	.4604	.3282	.2483	.1680
		SX10	.3089	.2584	.1929	.1462	.2373	.1107	.0813	.0792	.0700
OBSN	HGT										
184	30	1	1.000	.773	.644	.499	.179	.134	-.359	-.557	-.581
184	1458	2		1.000	.793	.552	.201	.155	-.394	-.592	-.495
183	3014	3			1.000	.533	.180	.135	-.370	-.599	-.516
181	5579	4				1.000	.135	.193	-.227	-.429	-.441
180	7193	5					1.000	-.119	-.263	-.292	-.238
178	9177	6						1.000	.251	.060	-.102
168	11806	7							1.000	.816	.299
140	13638	8								1.000	.859
114	16221	9									1.000

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Climatology	CLIM	Equipment	EQUI		
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Atmosphere	ATMO				
Density	DENS				
Data	DATA				
Tables	TABL				
Russia	RUSS				
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Means	AVER				
Season	SASO				
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